

Long-Range Optimism Expressed in Talk by Dr. Russell Coleman

By JOHN CIPPERLY
Croplife Washington Correspondent

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By making maximum use of soil conservation practices, plus adequate fertilization of land and efficient use of water facilities, this can be accomplished, he declared.

Dr. Coleman's statement appears to set forth the objectives of the plant food industry in a constructive light and showed the industry's unwillingness to accept widely-forecast frustration and defeat arising from the surplus problems now casting a shadow over cotton, wheat, corn and other crops.

These problems can be overcome, Dr. Coleman declared, through good soil management practices and at the same time through reduced use of crop land. In this way, the field crop farmer can cut his per unit cost, just as industry does, and thus improve his net profit per acre and maintain production at levels adequate for foreseeable needs. At the same time, unneeded crop land can be built up into an adequate fertile reserve to be brought back into production as the expanding population requires.

Primarily, Dr. Coleman reported that economic studies indicate that adequate use of plant food materials up to levels recommended by agricultural college scientists result in a net gain in organic materials retained in the soil, while at the same time increasing yields per acre. In short, the practice of recommended plant food use not only increases per acre output but halts the depletion of needed plant food ingredients in the soil.

Using his statistical material as a primary guide post, subject to later

(Continued on page 20)

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The company said the expansion is to meet increased demands of the aluminum, detergent and fertilizer industries in the St. Louis area.

Preliminary Reports and Recommendations Heard at New York Pesticide Meeting

By WALTER C. SMITH
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The meetings were devoted to an informal exchange of information between research and extension personnel of the Ithaca and Geneva Stations of Cornell University and the members of the pesti-

Pennsalt Erecting New Granular Fertilizer Plant

PHILADELPHIA — The Pennsylvania Salt Manufacturing Co. has started construction of a plant for the production of granular type commercial fertilizers, William P. Drake, president, has announced.

"The addition of this facility reflects Pennsalt's growing interest in the agricultural chemicals and commercial fertilizer industries," Mr. Drake said, "and the inclusion of these new products in our I. P. Thomas fertilizer line will result in a substantial expansion of our domestic distribution. Through Pennsalt International Corp., they are also expected to find extensive markets abroad."

The new plant was designed by Pennsalt's central engineering staff and is being built by the Unkefer Brothers Construction Co. of Philadelphia. It will be completed in January, 1956.

Pennsalt acquired the 83-year-old I. P. Thomas Co. a year ago. Under the direction of R. R. Hull, general manager, it has become the sixth operating division of the company. Its distribution facilities cover much of the eastern seaboard.

The new production unit will adjoin Pennsalt's plant and central warehouses at Mantua Point on the Delaware River in Paulsboro, N.J. Principal products of the present plant are conventional commercial and specialty fertilizers, triple superphosphates, phosphoric and sulfuric acids, blended insecticides and "Hy-Phos," a recently developed water conditioning chemical.

Other Pennsalt agricultural chemicals include insecticides, fungicides, defoliants, desiccants and weed killers. These are produced in Pennsalt plants at Tacoma, Wash.; Portland, Ore.; Bryan, Texas, and Montgomery, Ala.

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Discussions of research results involving specific insect and disease pests of crops and livestock, pesticide and pesticide equipment comparisons and verbal presentation of recommendations for 1956, comprised the bulk of the program. Industry representatives also were featured speakers.

The sessions were opened with an address by Dr. W. I. Myers, dean of agriculture at Cornell. Discussing the relationship between industry and the land-grant colleges, he said that far-reaching improvements in farm production have been possible largely

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(Continued on page 8)

Portland Seed Co. Buys Control of Chas. H. Lilly Co.

SEATTLE — Controlling stock in the Chas. H. Lilly Co., Seattle, has been purchased by Portland (Ore.) Seed Co., to place under the same ownership two of the Pacific Northwest's leading fertilizer, and seed and garden supply firms. The joint announcement made by the two firms stated that each company will continue to operate independently.

F. C. Trullinger, new president of the Lilly firm, is also president of Portland Seed Co. He succeeds C. F. Larsen. J. D. Trullinger, vice president of Portland Seed, has been made vice president of Lilly. E. E. White, formerly Lilly vice president and treasurer, is now secretary-treasurer of the new firm.

The combined business experience of the two firms totals 133 years, as Portland Seed Co. was founded in 1892, just seven years after the start of the Chas. H. Lilly Co., and quickly gained an important position as a distributor of agricultural, seed and gardening supplies. The Chas. H. Lilly Co., as well as acting as a distributor for such supplies, specializes in seed culture and the manufacture of fertilizers.

In addition to its Seattle headquarters, the Chas. H. Lilly Co. has plants and offices in Ellensburg, Mount Vernon, Yakima, Spokane, Albany and Portland. Portland Seed Co. operates a Seattle branch, and owns the Inland Seed Co. in Spokane, a separate corporation.

NPFI Meeting Set

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Phytopaths Name F. O. Holmes; Study Results of Fungicide Tests in Northeastern Area

By WALTER O. SMITH
Croplife Editorial Staff

WEST SPRINGFIELD, MASS.—F. O. Holmes, Rockefeller Institute, New York, was elected president of the Northeastern Division, American Phytopathological Society, succeeding A. B. Burrell, Cornell University, Ithaca, N.Y., at the group's annual winter meeting, held here Nov. 3-4 at the Eastern States Farmers' Exchange, Inc.

Other officers named at the meeting were B. H. Davis, Rutgers University, New Brunswick, N.J., vice president, and B. A. Friedman, U.S. Department of Agriculture, New York, secretary-treasurer. Continuing as counselor is E. G. Rex, New Jersey State Department of Agriculture, Trenton.

More than 100 university and experiment station research workers and industry representatives were present at the two-day meeting, with several from outside the continental U.S. Attention was focused principally on the control of fungi, nematodes, viruses and the activity and influence of insecticidal and fungicidal materials.

Research information, basic to certain types of fungicides, insecticides and herbicides was given in a paper by Robert H. Daines, E. Brennan and L. Leone, Rutgers University. The subject was "Fungicidal activity of hydrocarbons as influenced by structure, aeration and irradiation."

The results of a study to determine the effect of these actions on hydrocarbons possessing olefinic groups showed greatest activity increase in those hydrocarbons possessing tertiary hydrogens.

Experiments to determine whether or not fungi are capable of developing a tolerance to fungicides, were discussed by A. D. Partridge and A. E. Rich, University of New Hampshire.

Test procedure involved periodic transfer on media containing the highest concentrations of fungicides at which good growth occurred. Fungi were transferred at intervals to media containing concentrations in excess of the original maximums.

It was noted that all organisms retained their tolerance to copper sulfate through a number of transfers on media containing no fungicides. However, some loss of tolerance was exhibited when organisms grown in the presence of mercuric chloride, glyodin and captan were carried through a number of transfers on media containing no fungicides.

The influence of insecticide and fungicide sprays on down mildew of broccoli was described by John J. Natti and G. E. R. Hervey, N.Y. State Agricultural Experiment Station, Geneva. Increase in incidence of mildew in plots sprayed with emulsifiable insecticide formulations appeared to be related to the dissolving of the bloom and the wax in the cuticle on broccoli leaves by the solvent contained in the emulsions, it was said. It was previously observed that downy mildew was more prevalent in plantings of broccoli sprayed with insecticides than in unsprayed plantings.

Association of the fungus *Rhizoctonia Solani* and a root-lesion nematode, *Pratylenchus Minus*, with a root rot of winter wheat in southwestern Ontario, was found to be close and consistent in studies by W. B. Mountain and W. G. Benedict,

Science Service Laboratory, Harrow, Ontario.

In greenhouse and field experiments where the effects of the two pathogens upon plant growth were separated by differential chemical treatments of the soil, combined effect of the fungus and the nematode upon growth of the wheat was almost twice as great as the effect produced by either pathogen alone. The studies showed the disease to be most severe at 90° F.

Effect of nutrition on the incidence of bacterial spot of peaches was discussed in a paper by Stephen Bachelder and Robert Daines of Rutgers University and Clayton E. Bartley, Metuchen, N.J. It was stated that excessive nitrogen fertilization may slightly increase the susceptibility of peach fruit to bacterial spot, although it was held doubtful that low-nitrogen or high-phosphorus fertilization would offer a practical means of control. The observations were based on the results of a three-year experiment in which fertilizer materials were applied in addition to standard fertilizer applications of growers. For each of the three years, fruit from high-phosphorus treated trees had significantly less bacterial spot than fruit from the high-nitrogen treated trees.

F. W. Holmes, Shade Tree Laboratories, University of Massachusetts, reported the nontoxicity of 1, 2-dibromo-3-chloropropane applied as

a soil drench to elms, oaks and maples. No phytotoxic symptoms were seen during the summer or fall after applications of 2.5, 5, and 10 gallons concentrations per acre. Growth of rye nearby was strongly retarded.

Two distinct types of corn stunt disease in Mexico were described by Karl Maramorosch, Rockefeller Institute, New York. A type designated as Rio Grande was said to correspond to the stunt reported previously from California and Texas. The Mesa Central type was found on the Pacific Coast and was known previously from the Central Plateau and Gulf Coast regions. Whether the two types of corn stunt are caused by strains of the same virus or two unrelated viruses, has not yet been established, it was stated.

Experiments with streptomycin and dithane indicated both materials are fungistatic rather than fungicidal, according to a report by P. J. Anderson, Imperial Agricultural Corp., Hartford, Conn. Sprays of each gave good control of blue mold in tobacco seedbeds. Dithane was said to have given excellent control of bed-rot.

Data submitted by Gustave Silber and John Kainski, Cornell University, was said to suggest 5% glycerol in a streptomycin sulfate spray will not substitute for higher concentrations of actual toxicant in field usage when inoculum levels are high in controlling halo blight of red beans.

R. F. Becker and E. A. Rich, University of New Hampshire, reported that viruses have a significant effect on plant production and yield of strawberries. Average number of runners per mother plant for virus-free catskill, premier and sparkle were 89, 160 and 95, respectively, while runners on local plants averaged 39, 93

and 81. Average yield per clone for virus-free catskill, premier and sparkle was 10.6, 13.5 and 10.9 qt., respectively, as compared to 3.9, 8 and 7.2 qt. for local plants.

Field control of root knot nematode in onion mulch by use of fumigants was discussed in a paper by Arden F. Sherf and K. W. Stone, Cornell University. Successful nematode control with D-D and "W-85" was reported, although "W-85" was said to have caused a moderate inhibitory effect in delaying growth and maturity with improper sizing of bulbs.

The possibility that ammonium sulfate may have some therapeutic value in suppressing verticillium wilt was speculated by Nestor Caroselli, University of Rhode Island. He reported that materials containing organic N₂ seemed to inhibit verticillium significantly in tests with sugar maples.

A need for a simply applied chemical for application by smaller tobacco growers to treat seed beds for disease and weeds, was noted by G. S. Taylor, Connecticut Agricultural Experiment Station, Windsor. Vapam was said to be a promising chemical of this sort for growers who cannot use steam, although dosage ranges still need to be determined.

Other papers presented at the meeting were "Datura as an Indicator Plant for Apple and Blueberry Virus Diseases," M. T. Hilborn and R. Bonde, Maine Agricultural Experiment Station, Orono; "Behavior of Juice Extracts of Certain Virus Isolates from Prunus and from Rose in Cucumber Plants," R. M. Gilmer, New York State Agricultural Experiment Station, Geneva; "The Mode of Infection of Low-Bush Blueberry by *Exobasidium Vaccinii*," M. T. Hilborn and F. Hyland, Maine Agricultural Experiment Station, Orono, and "Nuclear Number in Conidia of *Verticillium Species*," Paul E. Waggoner, Uheng Khoo and H. T. Stinson, Connecticut Agricultural Experiment Station, New Haven.

Control Officials Publication to Be Available Dec. 1

CLEMSON, S.C.—The official publication (No. 9) of the Association of American Fertilizer Control Officials will be available by Dec. 1 at \$2 a copy, with discounts on lots of 100 or more copies, B. D. Cloaninger, secretary-treasurer of the association has announced.

The publication contains definitions of the major fertilizer terms, proceedings of the 1955 annual meeting model fertilizer bill (tenth draft), summary of present states fertilizer laws, up-to-date list, addresses and telephone numbers of all fertilizer control officials in the United States, Canada and Puerto Rico.

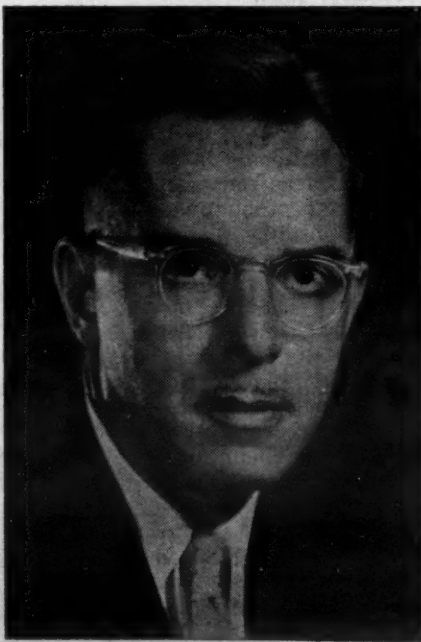
The publication also contains in detail all talks, including charts, graphs and tables, made by authorities of the following subjects: plant food research as related to fertilizer practices, ratios and multiple grades as related to soil testing, new developments in the manufacture of fertilizers, current trends in complete liquid fertilizers, acquainting the public with the fertilizer control official program and distribution of bulk fertilizer in the U.S. in 1953-54.

Reports of all investigators, committees on changing fertilizer guarantees from the oxide to the elemental basis and the model state fertilizer bill, are included.

Orders should be filed with Mr. Cloaninger. A bill can be submitted or the check may accompany order.

DOW DIVIDEND

MIDLAND, MICH.—The board of directors of the Dow Chemical Co. has declared a dividend of 25¢ a share on its common stock payable Jan. 13, 1956, to stockholders of record at the close of business on Dec. 21, 1955.



James P. Toffaleti

Calspray Announces Appointment of Three New District Managers

RICHMOND, CAL.—Appointment of three district managers for the California Spray-Chemical Co. has been announced by H. J. Grady, vice president and regional manager-East, marketing department of Calspray.

James P. Toffaleti has been named manager of the south central district, and from his office in Shreveport, La., will supervise the company's operations in Louisiana, Oklahoma, most of Texas and parts of Arkansas and New Mexico.

Mr. Toffaleti has been with Calspray for nine years and has been Mississippi Delta area district manager. A native of Port Tampa City, Fla., he attended the University of Florida, where he received his bachelor of science degree in 1939 and his master of science degree in 1941. During World War II he served in the South Pacific area as a captain in the army.



Cecil M. Crutchfield

Cecil M. Crutchfield has been named manager of the Mississippi Delta area, and from headquarters at Troy, Ala., will handle Calspray operations in Alabama, Mississippi and parts of Arkansas, Florida and Tennessee.

Mr. Crutchfield, a native of Milton, Fla., received his bachelor of science degree in 1941 and his master of science degree in 1943 from the University of Florida. During World War II he was a first lieutenant in the army and served in Europe. He has been with Calspray nine years and has been a branch manager in Alabama.

Earl Lanier Stripling, Jr., is new district manager for the Southeast. From his office at Goldsboro, N.C., he will supervise Georgia, South Carolina, and part of North Carolina operations for Calspray.

Mr. Stripling has been with Calspray for six years, and prior to this appointment, was a branch manager for Florida, Cuba and Puerto Rico. During World War II, he served in the European theater as a major in the field artillery of the army.

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John J. Bingham

John J. Bingham Named Vice President of Plant Food Corp.

LOS ANGELES—John J. Bingham, manager of the northern division of Plant Food Corp. for 15 months, has been elected vice president of the company, according to John E. Campbell, president.

Mr. Campbell said that under Mr. Bingham, sales of the northern division have more than doubled and that the investment in plant facilities and equipment have increased substantially. The division now has warehousing and service facilities throughout the southern and central Joaquin Valley.

Cotton Conference to Emphasize Best Production Package

MEMPHIS—Several hundred agricultural leaders from every cotton-producing state will gather here Dec. 16 to study an "over-all" approach to cotton production problems.

The first annual Beltwide Cotton Production Conference, to be held at the Hotel Peabody, will emphasize the importance of fitting together the "package of production practices" for any individual farm, rather than using a piecemeal approach in adopting new practices.

The National Cotton Council said that attention also will be focused on insect control, disease control, chemical weed control, fertilization, irrigation and defoliation. Attendance at the meeting will be representatives from all public and private groups throughout the Cotton Belt interested in cotton research and education.

Previously the Council has sponsored separate conferences on insect control and defoliation. The production conference not only recaps these three meetings, but also discusses other problem areas within its scope as well.

Cooperating with the Cotton Council in setting up the meeting are Cotton Belt land grant colleges, the U.S. Department of Agriculture, the agricultural chemical industry, farm organizations and others. Immediately preceding the conference, and held in conjunction with it, will be separate technical meetings of groups particularly concerned with defoliation, disease control and insect control.

The group concerned with insect control will be engaged partly in discussing possibilities that several cotton insects have developed resistance to commonly recommended insecticides. Insect experts will discuss these possibilities in their closed technical meeting, then present their findings to the Beltwide Conference.

Pasture Fertilization Gives Good Results In Minnesota Tests

ST. PAUL—Despite unusually poor weather and grazing conditions, fertilized pastures came out far ahead of unfertilized in producing beef gains this summer at the University of Minnesota's Rosemount Agricultural Experiment Station.

Steer gain per acre for fertilized pasture was 222.2 lb., for unfertilized pasture, 161 lb. Also, the cattle pastured in rotation on fertilized pastures sold for a little more than animals grazed on unfertilized pasture.

Steers on fertilized pasture sold for \$20.50 per hundred pounds, those on unfertilized for \$20. Value of beef produced per acre on fertilized pasture was \$45.44, on unfertilized \$32.22. In 1954, a better-moisture year, fertilized pasture produced \$66.46 worth of beef per acre, while

unfertilized produced \$29.06 worth, \$37.40 per acre less.

All the pastures had been limed in 1952 at three tons per acre. Half of each pasture had been fertilized with 500 lb. of 0-20-20 per acre as found necessary by soil tests.

Rosemount's 1955 pasture season was unusually poor. In April, May and most of June there was drouth and pasture yield was cut seriously. There was another long dry spell from Aug. 1 through Sept. 15.

Paul M. Burson, university soils professor who coordinates the beef cattle-grassland project, says that the fertilized pastures were not set back as much by drouth as were the unfertilized. But the balance of legumes to grasses changed as moisture grew scarcer.

RAT CONTROL CAMPAIGN

NEWARK, DEL. — Delaware has launched a month-long campaign to cut down the rat population, according to Ray Lloyd, assistant agricultural extension agent in Georgetown.

FIRECRACKERCIDE

WAURIKA, OKLA. — Pecan growers in this area have devised a firecrackercide to keep crows from their fields at harvest time. The device consists of a long, slow-burning fuse and a string of firecrackers, which explode at regular intervals. A few pops discourage the crows, and they leave the fields, the growers say.

2,4,5-T Increases Prune Size in Test Spraying

SACRAMENTO—An experimental spraying with 2,4,5-T has shown an increase of 11% in prune size on a Tehama County, Cal., ranch. Prune maturity also was moved up four or five days in the test block.

Wally Schreder, Tehama County farm adviser, who conducted the test, said that there also was an over-all increase in production of 23% as a result of the spray.

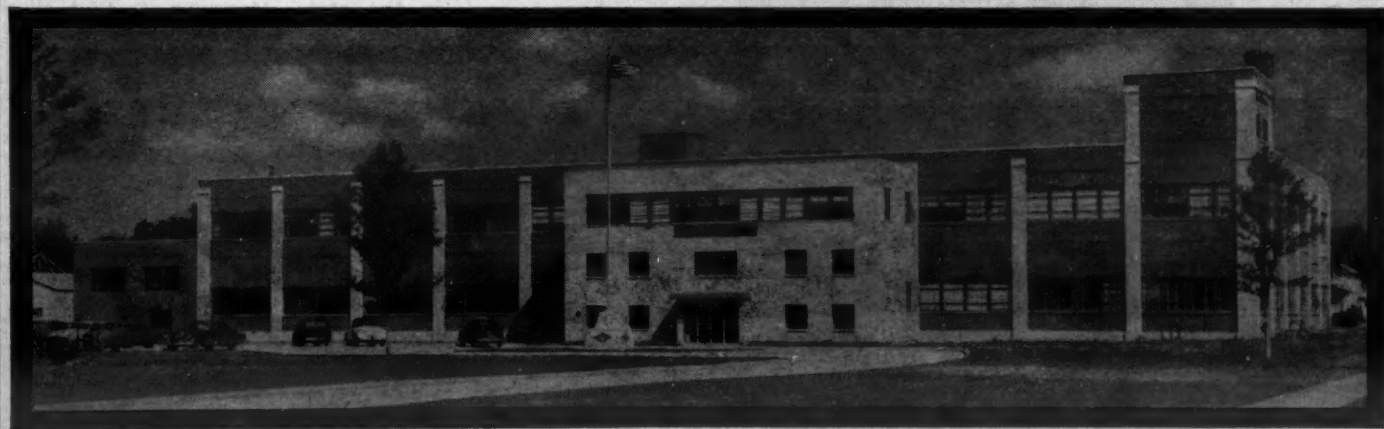


Diamond Chemicals

Insecticide formulators choose DIAMOND DDT·LINDANE·BHC for dependable potency

Formulators have come to depend on DIAMOND agricultural chemicals and one reason is the building pictured below. It's DIAMOND's research and development center, where the search for new and better insecticides is continually being pushed forward.

At other laboratories, located right at each DIAMOND plant, we check on every production step. This dependable *Quality Control System* is another reason for the uniform high quality of DIAMOND agricultural chemicals.



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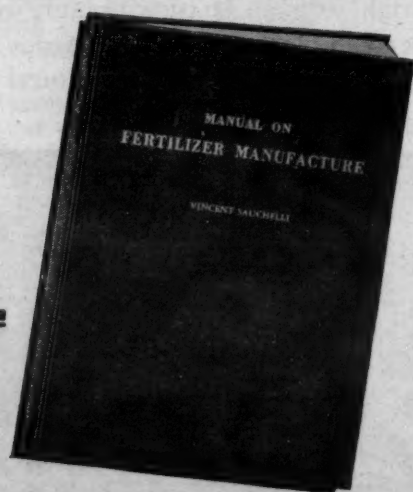
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INSECT AND PLANT DISEASE NOTES

Infestation of Forest Pests Reported in West

PULLMAN, WASH. — A tussock moth invasion of Douglas fir timber in a tri-county area of eastern Washington has been reported here.

David Brannon, entomologist, and Knut Lunnum, forester, both of Washington State College, said 9,000 acres of timber in Spokane, Stevens, and Pend Oreille counties are now infested by the destructive pest.

The outbreak, ranging in extent from a few trees to 2,000 acres, was discovered during a recent aerial survey by personnel of the Missoula Forest Insect Laboratory.

Since the insect passes the winter in the egg stage, the specialists said action to stop the moth in its tracks should be readied by next spring.

The infestation has increased considerably in size during the past year. If not checked, it could easily result in an outbreak similar to the one in 1947 when the moth caused serious damage to 395,000 acres of Douglas fir in northern Idaho. An epidemic of the Douglas fir tussock moth in the Colville National Forest in 1930 killed at least 300-million board feet of Douglas and Balsam fir.

The specialists said the present outbreak involves mostly state and private timberland. They advised owners and representatives of the State Forestry Department to develop a plan of action. Once plans are made they can ask the U.S. Forestry Service for assistance, the specialists said.

Insects "Slow Down," But Still Active, Report States

BLACKSBURG, VA. — A general slow-down of insect activity is noted in Virginia, but there still are some trouble spots, says Arthur P. Morris, associate entomologist at Virginia Polytechnic Institute.

Spittlebugs, aphids and three-cornered alfalfa hoppers are still evident to some degree on alfalfa in the state. However, it is too late in the season to apply controls, the entomologist adds.

Cluster flies and ants have joined box-elder bugs in a search for warm winter quarters, and are annoying homeowners in some parts of the state. The winged forms of the ants have been mistaken for termites.

Mexican bean beetles and corn earworms are causing about normal damage for this time of year to late beans in eastern Virginia. Green peach aphids are light to moderate on spinach and a few Hawaiian beet webworms are also present on spinach. Most of the better growers are treating cruciferous crops to protect them from the insect pests that customarily attack at this time of year.

Oregon Prepares for Possible Infestation

CORVALLIS, ORE.—Possible invasion of Oregon by a destructive pest of alfalfa that caused multi-million dollar damage in the Southwest last year is being eyed by Oregon State College scientists.

Dr. Paul Ritcher, OSC entomology department head, said department staff members will be on the lookout for the spotted alfalfa aphid in cooperation with state department of agriculture officials next spring.

Mr. Ritcher, recently named chairman of a western states regional research project to exchange information on pests of clover and alfalfa, said spread of the insect is mushrooming through the west. Alfalfa growers in Tulare County, California, alone reported \$2 million damage this year.

In 1954, the insect caused an esti-

mated damage to alfalfa of \$4 million in New Mexico and \$500,000 in Arizona. Last year, it made its first heavy inroads in California and reduced some Nevada alfalfa stands by 80%. Serious infestations have also occurred in parts of Oklahoma, Texas, Utah, Kansas and Nebraska. Mr. Ritcher says it is a threat to all alfalfa-producing regions.

Winter Cover Crops Get Good Start In Mid-South States

MEMPHIS—Green patches began dotting Mid-South farm lands last week. The patches of green, which tell of soil conservation measures and restoration of soil fertility, are fields of winter cover crops and small grain such as rye, wheat, oats and vetch. They stood out boldly as cold weather turned the white cotton fields into a brown background and pickers cleaned up the harvest.

Extension agents in Arkansas, Mississippi, Missouri and Tennessee in their weekly crop reports said thousands of acres of winter cover crop pastures and small grains are showing up well following recent rains.

The cotton crop in each of the states is nearing completion. Many mechanical pickers are in the field to wind up the larger than expected harvest.

In Mississippi, W. R. Thompson, agricultural extension agronomist, said small grains and rye grass are coming up well over most of the state. He advised against grazing until the crops are at least six inches high.

Heavy infestations of corn weevils are being found in fields of ear corn, A. G. Bennett, Mississippi extension entomologist, reported. This could cause heavy damage to corn during the coming months.

The harvesting of cotton, corn and other crops is almost completed in many areas, extension workers reported. Quite a bit of cotton remains unpicked in the north delta.

Miles McPeck, agricultural statistician for the Federal Crop Reporting Service, said statewide reports indicate farmers have stocked up with livestock feed for the coming winter.

"In fact, we are now winding up one of the best years farmers ever had in Arkansas so far as a growing season is concerned," he said.

Mr. McPeck estimated the cotton harvest as from 80 to 85% harvested, and that rice is "practically in."

Some corn and sorghum still are in the fields, mainly because farmers have been giving all the attention of late to cotton picking, he added.

"Pemiscot County has already ginned more than 100,000 bales of cotton with about 75% of the area beans harvested," W. F. James, county agent in the Missouri county, said.

Mr. James said the cotton between the Mississippi River and the levee last to open each year, was being harvested.

Field operations are slow but quite a bit of vetch and rye, as well as some wheat, are being seeded.

"The moisture situation is pretty fair, if we just don't get too much rainfall in the next few days," he said.

More mechanical cotton pickers were pressed into service by Tennessee farmers stepping up the harvest of the remaining 25% of the area's cotton crop, Judd Brooks, district extension agent, said.

"Small grains, wheat and oats are being planted as fast as fields are cleared of cotton and corn," Brooks said.

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Edmund Greene New Assistant Head of Monsanto Advertising

ST. LOUIS — The appointment of Edmund Greene of St. Louis as assistant director of Monsanto Chemical Co.'s advertising department has been announced here by William R. Arrell, director of advertising.

At the same time, John L. Hamer, director of marketing for Monsanto's Organic Chemicals Division, announced the appointment of William H. Grosse as advertising manager of the division, succeeding Mr. Greene. Mr. Grosse has been corporate advertising manager in the central advertising department.

Succeeding Mr. Grosse as corporate advertising manager will be H. Chandler Holmes who has been manager of creative services for the advertising department. John C. Sparkman, who has been assistant manager of creative services, will be manager of creative services. All four appointments are effective Dec. 1.

Mr. Greene, who has been advertising manager for the Organic Chemicals Division since 1954, joined Monsanto in 1947 and was sales promotion and advertising manager for the company's former Merrimac Division at Everett, Mass., until 1952. He was sales promotion manager for the Organic Chemicals Division until his appointment as advertising manager for that division.

A graduate of Harvard University with an A.B. degree in chemistry, Mr. Greene worked for three years on newspapers at Boston. He was employed by Smith, Kline & French Laboratories and by Rohn & Haas prior to joining Monsanto.

Mr. Grosse, a native of St. Louis, received a B.S. degree from St. Louis University in 1942 and was chief chemist for Lever Brothers Co. at its St. Louis plant from 1934 to 1947. He joined Monsanto in 1947 as a technical writer. He was advertising manager for the company's former Western and Texas Divisions and has been corporate advertising manager since 1954. In 1953, Mr. Grosse was the winner of the Putman Award for industrial advertising.

Mr. Holmes has been with Monsanto since 1951. Prior to being appointed creative services manager in 1954, he was advertising manager for the company's Inorganic Chemicals Division. A native of St. Louis, he attended Washington University and St. Louis University.

Mr. Sparkman, who joined Monsanto in 1952, was educated at the Walker Art Center in Minneapolis, the Grand Chamier at Paris and Washington University. He joined Monsanto in 1952 as art and design supervisor.

John C. Denton Upped to President of Spencer Chemical Co.

KANSAS CITY — John C. Denton, formerly general manager of engineering and construction of Spencer Chemical Co. here has been named president and general works manager to succeed Richard F. Brown who resigned.

Mr. Denton is a graduate of Tulsa University with a degree in petroleum engineering. With Spencer since 1942, he has had broad experience in operation, having served as works manager of Spencer's Henderson, Ky., works.

Other personnel changes announced by Kenneth A. Spencer, president, include the promotion of Byron Kern, formerly chief engineer of the company, to the position of general manager of engineering and construction, and Robert Byrum, formerly assistant chief engineer, has been promoted chief engineer of the company. Mr. Kern is a graduate in chemical engineering from the University of Kansas. He joined Spencer in 1946 and has been chief engineer of the company since 1953.

ICC Order on Freight Surcharge Becomes Permanent

WASHINGTON — The Interstate Commerce Commission has made permanent a 1-15% surcharge on freight tariff schedules of the carriers. This means that subsequently the railroads may file new permanent tariffs to incorporate the surcharges which have been in effect on old tariff rates in the regular tariff schedules.

The action was protested by shippers and shipping trade organizations but there was little hope that such protests would be effective.

At the same time the ICC ruled that the controversial trip-lease measure which the commission attempted to regulate several years ago on truck shipments of agricultural commodities will go into effect Dec. 1. The commission had previously deferred imposition of those rules until March 1.

Under the ruling, truck haulers of

agricultural commodities will be permitted to lease their vehicles to interstate licensed trucking companies for a period of not more than 30 days in which they may obtain return loads of industrial goods or other products if the return load is in the general direction of the point of origin of the agricultural commodity shipment or is one trip in a series moving to that point of origin.



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Predominance of Chemical Industry in Southeastern U.S. Stressed by Speaker

COLUMBIA, S.C.—The agricultural chemical industry has played a "definite role" in reducing the ratio of farmers in the nation from 70% in 1800 to an estimated 10-12% today, Dr. William P. Boyer, research director of the Virginia-Carolina Chemical Corp., told the Southeastern regional convention of the American Chemical Society here Nov. 3.

By 1975, he predicted, agronomic advancement will reduce that proportion to only five per cent. This means that each farmer will be feeding 20 non-farmers.

"New seeds and more productive crops, good soil management, chemical fertilizers, farm equipment and mechanical methods, pesticides, irrigation, and improved farm education have all contributed to our present farm productivity which is the envy of the rest of the world," Dr. Boyer said.

"Out of all this the chemical in-

dustry has built a sound relationship with the American farmer by supplying him with better fertilizers and more efficient pesticides. In return, the farmer has compensated by expanding the markets for our agricultural chemicals to a record level.

"The American fertilizer industry, the largest segment of the chemical industry tonnage-wise, dates back to a small superphosphate plant constructed at Baltimore, Md., a hundred years ago. "As to future possibilities for an expanding market in this field, it should be noted that in 1950, only 26% of U.S. cropland and a scant 5% of our plowable grasslands received any fertilizer. As a nation, it is disheartening to note that we are removing more nutrients from our soil than we are returning to it," the speaker noted.

Continuing his review of chemical manufacturing and marketing in the Southeast, Dr. Boyer said that next to fertilizers, the pesticide market is the largest consumer of agricultural chemicals. "This can be understood when we consider that damage due to agricultural pests costs the American farmer an estimated 13 billion dollars annually on today's market; about 4 billion of this by insects;

another 4 billion by fungi and bacteria; and 5 billion by weeds."

"In 1950, the value of the nation's agricultural production might have been 40% greater, but for the ravages of such pests. Science has made outstanding progress in recent years to alleviate this damage and in doing so has opened new and expanded markets for our chemicals. More efficient and less toxic products, along with a farm education program, will insure an expanding market for future growth," he said.

Pointing to the industrial growth of the Southeast, he declared that its production of sulfuric acid accounts for 26% of the nation's output despite the relatively small area and population involved. This production is tied in closely with the area's position in production of superphosphate and triple superphosphate fertilizers.

The speaker added that not only these types of fertilizer materials are being produced in the Southeast, but also the nitrogen industry is rapidly becoming larger and more important there.

AGRICULTURAL PLANS MADE

JERUSALEM—As part of a 5-year plan for soil conservation and agricultural settlement, Israel expects to plant 25,000,000 trees on now-barren land to intensify its "war against the desert." The over-all program calls for 56,000 acres turned to forest; 106,000 to grazing land; 125,000 acres into agricultural settlement areas and 75,000 acres into new settlements.

North Dakota Dealers to Hear Talks on Mixtures

FARGO — Fertilizer dealers will hold their seventh annual North Dakota conference at North Dakota Agricultural College in Fargo Nov. 23. The program for the session was announced last week by Dr. E. B. Norum, head of the college soils department, who will preside at the conference the first half day. Registration is 9:30 a.m. A film, "George Tackles the Land," will be shown courtesy of Spencer Chemical Co.

Speakers are Dr. M. H. McVikar of the National Plant Food Institute, Washington, D.C., on "Pesticide Mixtures from the Industry Viewpoint"; Dr. John Callenbach, chairman of the NDAC entomology department, on "An Entomologist Looks at Fertilizer Pesticide Mixtures," and Dr. J. C. Zubriski, assistant soils professor NDAC, on "Fertilizers and Soil Moisture."

Presiding in the afternoon will be Henry Ness, Fargo, Cass County extension agent. R. B. Widdfield, agronomist of the extension service, will discuss the extension service educational program; Dr. R. A. Young, associate professor of soils, NDAC, will speak on "Use of Fertilizer for North Dakota Crops"; Dr. Zubriski will report on fertilizing North Dakota corn; Armand Bauer, supervisor of the NDAC soil testing laboratory, will outline the state's soil testing program; V. L. Weiser, extension soil agent, will discuss potentials in fertilizer use; Dr. McVikar will present information on the fertilizer supply and outlook, and the afternoon program will conclude with Dr. Norum outlining some of the considerations in making fertilizer recommendations.

Three additional half-day dealer conferences at North Dakota points in December also have been announced. These are in Williston Dec. 8, Mandan Dec. 9 and Devils Lake Dec. 12. All open at 1:30 p.m.

Chemical Specialties Group Plans Meeting

NEW YORK — Nearly a thousand research and marketing officials of companies supplying specialty chemicals for use in the home and industry will attend the 42nd annual meeting of the Chemical Specialties Manufacturers Assn. at Hotel Roosevelt here December 5-7.

In addition to the election of officers scheduled for the Dec. 6 luncheon, the association will also present its 1955 Achievement Award to Jay C. Harris, director of the application research department of Monsanto Chemical Co.'s merchandising division, Dayton, Ohio. The award, instituted in 1952 to recognize outstanding achievements in the chemical specialties field, is being made to Mr. Harris for his work over the last 20 years in evaluation of detergents and establishment of industry standards for surface active agents.

IMC Establishes Technical Department at Bonnie

CHICAGO — Establishment of a technical department for the Bonnie phosphate chemicals plant of International Minerals & Chemical Corp. near Bartow, Fla., has been announced by Howard F. Roderick, vice president in charge of International's Phosphate Chemicals Division.

Raymond E. Tuttle has been made manager of the new department which will consist of two present groups, the process engineering group and the chemical control laboratory. Mr. Tuttle has been chief process engineer at Bonnie for the past year and is a chemical engineering graduate of Cornell university. In his new capacity he will report directly to William Bellano, manager of Bonnie plant operations.

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Treats the chemistry of insecticides, the history of their use, their commercial importance here and abroad, the nature of the major uses, the influence of environment on effectiveness. Materials are arranged according to their chemical relationships. Two chapters relating to organic compounds largely new as insecticides. Illustrative data in form of tables, and a convenient appendix of equivalents arranged for practical use in the field. 504 pages \$7.00

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A textbook-manual presenting a modern view of the rapidly developing field of chemical weed control. Reports in detail the research on which most modern herbicide usage is based. Weeds, their reproduction, prevention, biological control, chemicals in weed control. Herbicides, foliage contact applications, hormone-like substances, root applications, evaluations of combinations of chemical applications. Weeds of grasslands and turf. Special weed problems, cropped and uncropped areas. Published 1952. 503 pages, 155 illustrations \$8.00

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The information is grouped according to field of application rather than to chemical composition or nomenclature. Chapters on insecticide label, seed disinfectants, herbicides, forest insects and diseases, livestock insects, and the pests found in household and industry. Fumigation of warehouses, residual sprays and preservatives for fruits, vegetables and wood products are covered. An up-to-date guide on pest control with the needs of operators, agricultural and structural specialists carefully considered. Shippers and warehouse personnel will find the book useful. \$10.00

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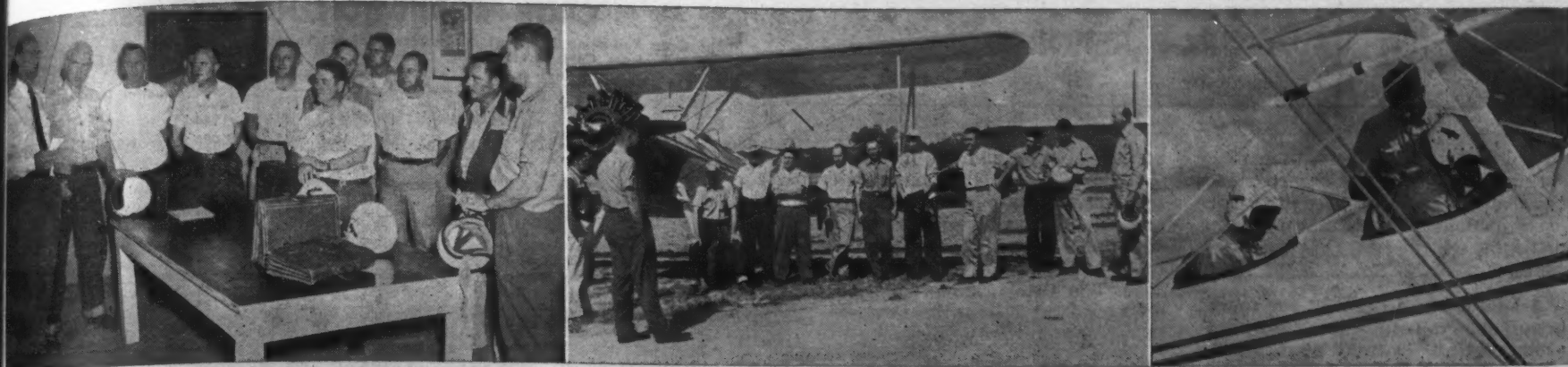
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AT AGRICULTURAL PILOT SCHOOL—Above are scenes from the agricultural pilot school which recently was started at Texas A&M College, College Station, Texas. At the left, Fred E. Weick, director of the school emphasizes safety during a ready room briefing. Several of the pilot trainees are holding crash helmets. The center picture shows the trainees getting last minute advice on the flight line from Gale F. Hanson, agricultural operations specialist with the Civil Aeronautics Administration, Washington. At the right Mr. Hanson (bare headed) checks the radio jack connection of a helmet headset just before Cleveland Rix, front seat, an instructor, takes a student for a flight. Mr. Rix is an aerial applicator from Navasota, Texas. Special radio equipment has been installed in the training planes so that instructors can talk to students while in flight.

FIRST COLLEGE-SPONSORED COURSE

Texas A&M Pilot School to Produce Specialists in Fast Growing Aerial Spraying Field

COLLEGE STATION, TEXAS — Aerial application—which in 1954 dropped 628,000,000 pounds of dust and 91,000,000 gallons of spray onto one acre of every six under cultivation—moved a step nearer maturity when classes started recently at Texas A&M College on the first college-sponsored training course for agricultural pilots.

Serious, well-trained specialists are necessary in aerial application today, and the pilot school at Texas A&M is designed to provide them, according to Fred E. Weick, head of the Personal Aircraft Research Center of the Texas Engineering Experiment Station, who directs the school.

The school is sponsored by the Texas A&M College System with cooperation from the Civil Aeronautics Administration, the Texas Aerial Applicators Assn. and other interested groups.

"The shortage of good pilots is always critical," says Gale F. Hanson, agricultural operations specialist with the CAA, who is a key figure in the school.

Pilots taking the course will receive instruction in all phases of their future business from top-ranking specialists in the different fields.

Dr. J. C. Gaines, head of the department of entomology, who has worked with aerial control of insect pests for more than 20 years, and his staff will provide instruction in this field. Mr. Weick and his assistant, George A. Roth will provide instruction in aircraft care and service, calibration of equipment and distribution patterns, seeding and fertilizing, and laws and regulations on the subject.

Dr. R. A. Darrow and Dr. Richard

Completes New Natural Gas Reforming Unit

TUSCOLA, ILL. — A new Girdler reforming unit to produce hydrogen from natural gas has been completed at the Tuscola, Ill., ammonia plant of U.S. Industrial Chemicals Co., Division of National Distillers Products Corporation.

Until now the raw material for U.S.I. ammonia manufacture has been hydrogen from the neighboring ethylene production facilities of National Petro-Chemicals Corporation, a subsidiary of National Distillers. The new unit will supplement the available hydrogen and make it possible to operate the 150 tons per day ammonia plant at full capacity at all times.

Behrens of the range and forestry department will conduct classes in herbicides for mesquite and mixed brush; Dr. Wayne C. Hall and Wayne G. McCully of the plant physiology and pathology department will discuss herbicides as defoliants and desiccants.

Dr. Gus M. Watkins, head of the plant physiology and pathology department will lecture on plant disease control; Herbert G. Thompson of the business administration department will conduct classes on customer relations.

Mr. Hanson, Cleveland Rix, an aerial applicator from Navasota, Texas, and Robert L. Hamm of the Personal Aircraft Research Center, will provide instruction on preflight aerodynamics and actual flight training.

Pilot trainees will fly the different types of aircraft used for agricultural purposes, and will practice their flying under actual conditions. When they study about the reactions of heavily loaded airplanes at very low altitudes, they

will fly them under those conditions. They will study reactions of planes while dropping payloads over fields.

First classes—and first flight training—were held Oct. 31. The school is scheduled to end Dec. 10, with presentation of certificates to those who qualify.

Students taking the course are:

Frank L. Baker, Perrinton, Mich., who has more than 1,362 hours of flying time; Holman E. Harp, College Station, Texas, formerly of Greenwood, Miss., who has 1,615 hours; Jon Haska, Akron, Ohio, with 451 hours.

Maynard K. Hefty, Boulder Junction, Wis., 4,500 hours; Jay A. McCausland, Bethlehem, Pa., Civil Aeronautics Administration; Jack L. Marchand, Oklahoma City, CAA; Alfred C. Reed, Lincoln, Neb., CAA; Douglas B. Richard, Torrington, Conn., a non-flying student, and John M. Wells, of Texarkana and Louisville, Ark., 660 hours—and the only member of the group, with aerial application experience—he has 200 hours as an applicator.

Enrolment in the school was limited by Mr. Weick and Mr. Hanson so that more careful attention could be given each trainee.

"We want to produce pilots—but we want them to be good pilots," Mr. Weick says.

These pilots will help fly the 4,200 airplanes now certified as agricultural aircraft in this country. And, if yearly growth figures can be used as an indication, they will help distribute

more materials in 1956 than were used in 1954 or 1955.

"Concerning this growth of aircraft use," Mr. Hanson says, "1955 was the biggest year we've ever had in forestry, too. More than 3,000,000 acres of forests were treated for spruce budworm, and more than 2,000,000 acres were treated for Mormon crickets and grasshoppers."

Figures for 1954 show that material used in normal agricultural purposes on more than 200 different crops on 37,000,000 acres included:

Dust—216,000,000 lb. sprays—58,000,000 gal.; fertilizer—251,000,000 lb. and 141,600 gal.; defoliants—17,000,000 lb. and 32,000,000 gal.; grasshopper bait—1,000,000 lb.

In addition, cities and towns used 807,000 gal. of spray for insect pest control.

Fertilizer Boosts Soybean Yields

ST. PAUL — University of Minnesota soils department tests show commercial fertilizer and fall plowing each can result in profitable yield increases of soybeans.

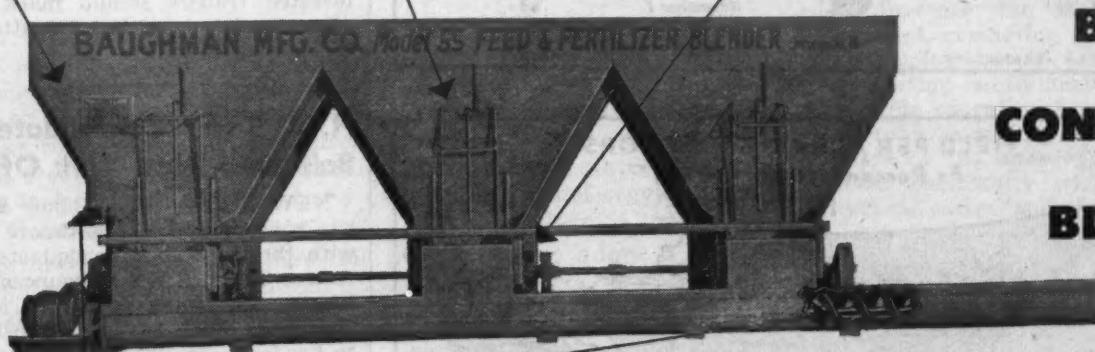
Fertilized fields of soybeans in Mower County, near Austin, gave as high as 12 bu. per acre more than nearby unfertilized fields, according to Charles A. Simkins, a University extension soils specialist. And fall plowing soybean fields increased yields as high as eight bushels per acre compared to spring plowing.

SCIENTIFIC Feed and Fertilizer Blending... AT NEW LOW COST!

BLENDING CHART indicates proper gate openings for batch being blended.

HOPPER GATE on every hopper has metered rule to assure accurate setting. Mixing and blending of 3 hoppers is simple, accurate!

HAND CLUTCH on each hopper permits use of any combination of hoppers, according to blend.



COUNTER records revolutions of hopper conveyor driveshaft. Is preset; stops when amount ordered is reached.

SCREW CONVEYOR at bottom of unit assures uniform blending.

Automatically...

... BLENDS exact proportion of ingredients needed.
... DELIVERS amount needed at approximately one ton per minute, depending on operator and weight of material.

Compact. Place on floor, hook up power. Low installation cost.

WRITE FOR BULLETIN A-402



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108 SHIPMAN ROAD • JERSEYVILLE, ILLINOIS

Baughman
HI-SPEED
BATCH
OR
CONTINUOUS
MIX
BLENDER

USDA CROP REPORT

(Continued from page 1)

north central states, did appraisals fall below last year, according to the report. Yields in the southern states are far above last year, despite severe freeze damage to fruit and nut crops and some vegetables in the early spring.

A summary of some of the more important crops indicates that corn production is estimated at 3,183, million bushels, 7% more than last year; sorghum grain, 227 million bushels, up 11% over last year; potatoes, 384 million bushels, 8% more than last year, and soybeans, 372 million bushels, 8% above last year's output.

Rice, with 52 million 100-lb. bags, is 11% under last year's figure, and apples, 105 million bushels are down 4% from last year.

A striking production success story is indicated in the fact that the 1955 yield index covering all crops, reaches the all-time high of 117% of the 1947-49 base. The figure is also 9% above the previous high recorded in 1948.

Total production of all crops matches the record of 106 of the 1947-49 base set in 1948. High yields per acre have more than offset total acreage reductions "with surprising outturns for a number of crops," as the USDA report put it.

Lack of rain in the western corn belt during late July and early August, is probably the limiting factor that prevented this year's corn crop from being the largest ever recorded. As it is, the 3.2 billion bushels is regarded as being "no dwarf" by USDA reporters.

Drouth cut into sorghum yields sharply in the Great Plains, but even so, this crop is yielding the second

largest harvest ever recorded. Large acreages were planted in this crop.

"Add to these late-harvested crops the largest oats crop ever grown, and the second largest barley crop, and the result is a large feed grain total which is 112% of the 1947-49 base. The 1948 grain production record stands at 116 on the same basis," the report observes.

Cotton production looms "amazingly large" (story in Croplife's issue of Nov. 14, page 1), with an estimated 14.8 million bales and 6.1 million tons of cottonseed and much more lint and seed than was produced last year. All this was accomplished on 14% fewer acres.

Production of rice is now even larger than was estimated earlier. Record yields in all states except California, brings the rice tonnage within 11% of the 1954 record, from 25% fewer acres. The California production was near-record size despite a cool and slow season throughout the far west.

Supplies including hay, silage, grazing from pastures and field residues, are reportedly greatly improved over last year's drouth scarcity in the South Atlantic, and South Central States.

Harvesting of most late crops is well advanced with excellent maturity and very limited frost damage. Soybeans were virtually all combined in many main producing areas by November 1. Corn was nearly all cribbed in Iowa and Minnesota and rapidly approaching this goal in Illinois. Sorghum grain combining was toward clean-up stage in many parts of the Great Plains.

Dry bean harvest in New York was lagging because of wet fields but nears completion in Michigan and is well along in California. Potato har-

CROP PRODUCTION, NOV. 1, 1955

The Crop Reporting Board of the Agricultural Marketing Service makes the following report for the U.S. from data furnished by crop correspondents, field statisticians and cooperating state agencies.

| Crop— | Yield per acre | | Production (in thousands) | |
|--------------------------------------|----------------|--------|---------------------------|-----------|
| | 1944-53 | 1954 | 1944-53 | 1954 |
| Corn, all, bu. | 86.4 | 37.1 | 39.4 | 3,080,115 |
| Wheat, all, bu. | 17.1 | 18.1 | 19.3 | 1,154,073 |
| Winter, bu. | 18.0 | 20.5 | 20.3 | 867,390 |
| All spring, bu. | 14.6 | 11.9 | 16.8 | 284,683 |
| Durum, bu. | 13.0 | 4.2 | 13.4 | 33,432 |
| Other spring, bu. | 14.8 | 12.4 | 17.1 | 253,251 |
| Oats, bu. | 33.4 | 35.6 | 38.9 | 1,323,321 |
| Barley, bu. | 25.9 | 28.5 | 27.4 | 266,918 |
| Rye, bu. | 12.1 | 13.8 | 13.7 | 21,097 |
| Flaxseed, bu. | 9.2 | 7.3 | 8.5 | 35,898 |
| Rice, 100 lb. bag. | 22.221 | 22.447 | 22.890 | 39,357 |
| Sorghum grain, bu. | 18.4 | 19.0 | 17.1 | 134,582 |
| Cotton, bale | 2279 | 2341 | 2431 | 12,952 |
| Hay, all, ton | 1.38 | 1.43 | 1.47 | 102,199 |
| Hay, wild, ton | .84 | .75 | .74 | 12,367 |
| Hay, alfalfa, ton | 2.21 | 2.15 | 2.10 | 36,890 |
| Hay, clover and timothy, ton | 1.41 | 1.43 | 1.48 | 31,115 |
| Hay, lespedeza, ton | 1.04 | .82 | 1.13 | 6,635 |
| Beans, dry edible, 100 lb. bag. | 1.078 | 1.199 | 1.187 | 17,317 |
| Peas, dry field, 100 lb. bag. | 1.228 | 1.300 | 1.298 | 4,764 |
| Soybeans for beans, bu. | 19.9 | 20.1 | 20.2 | 238,488 |
| Peanuts, lb. | 784 | 737 | 1,050 | 1,921,095 |
| Potatoes, bu. | 213.1 | 252.8 | 265.8 | 401,146 |
| Sweet potatoes, bu. | 94.3 | 86.5 | 106.6 | 46,951 |
| Tobacco, lb. | 1,213 | 1,342 | 1,498 | 2,098,738 |
| Sugarcane for sugar & seed, ton | 20.4 | 24.2 | 24.2 | 6,570 |
| Sugar beets, tons | 14.1 | 16.1 | 16.8 | 10,431 |
| Pasture, % | .73 | .69 | .73 | 14,091 |

*Estimates for wheat, oats, barley, rye, flaxseed, hay and dry field peas are not based on current indications, but are carried forward from previous reports. †Pounds. ‡Condition Nov. 1. †Excludes sweet clover and lespedeza hay. ‡Picked and threshed.

vest was finished in October in Maine, was nearly done in the Red River Valley of the North, and in Idaho. Sugar beets were mostly dug except in California and harvest was well along there. Southern rice was mainly combined.

Peanut digging and picking lagged in the Virginia-Carolina area but was nearly done elsewhere. Sweet potatoes were being dug, and sugarcane harvested and ground. Cotton harvest lagged moderately except in the Southeast and Central cotton areas. In California, both cotton and rice were delayed by a cool slow season.

Pesticide Grant Awarded to Turkey

WASHINGTON—The International Cooperation Administration has announced a requirement for pesticides by Turkey involving an expenditure of \$33,000.

Required are Thanite insecticide base; H.C.B. hexachlorobenzene; ethylene dichloride and carbon tetrachloride, the last two named being basic raw materials for the manufacture of grain, cotton and dried fruit fumigants. Thallium Sulfate and warfarin are required as the basic raw materials for the manufacture of rat poison.

Also needed by the Turks are pyrethrin concentrates, as insecticide knock-down agents, emulsifying and wetting agents for the preparation of liquid emulsions and wettable dusts, and phenothiazine, the basic raw material for the preparation of cattle dips and contact insecticides.

The buyer is Koruma Tarim Ilacilari A.S., Asirefendi Caddesi, Katircioglu Han, Kt 2, Sultanhaman, Istanbul. The materials are to come from the U.S. and possessions and interested traders should mark their offers or inquiries for the attention of Hikmet Tuzcu.

H. J. Baker Consolidates Baltimore, New York Offices

NEW YORK—H. J. Baker & Bro. has consolidated its Baltimore office with the New York headquarters effective Oct. 1, it was announced here. Wayne M. Waller, manager of the Baltimore office, has been transferred to headquarter offices here. The consolidation was made to develop more effectively plans for customer service and market development from a central location, according to the firm's announcement.

JOINS EXTENSION STAFF

GAINESVILLE, FLA.—Dr. Donald M. Coe, assistant plant pathologist at the Agricultural Experiment Station's Indian River Field Laboratory, Fort Pierce, Fla., has transferred to the State Agricultural Extension Service staff at the University of Florida as an associate plant disease worker.

Wet fields have delayed harvests in some limited areas in North Central and Eastern States.

Fall seeded grains generally have started well and are thriving east of the Mississippi, especially in East North Central and some mid-Atlantic areas. Some seedlings were made late. Much Great Plains winter wheat which made a good start has been held back by a dry October and needs moisture to promote growth and firm the soil against blowing. General rains were also needed over much of the South to aid winter grains and cover crops.

Merger of Stauffer, Consolidated Approved By Stockholders

NEW YORK—The merger of Consolidated Chemical Industries into Stauffer Chemical Co. was approved by stockholders of both companies at special meetings held Nov. 14 in San Francisco. (See page 1, Sept. 26 Croplife.)

At the Stauffer meeting 2,204,499 shares, or 93% of total shares outstanding, voted in favor of the merger, with 390 shares voting no. At the Consolidated meeting, 223,013 shares of the Class A stock, or 83% of the total shares of such stock outstanding voted in favor of the merger, with 2,985 shares voting no.

After the merger the total assets of Stauffer Chemical Co., the surviving corporation, will be \$125 million.

Girdler to Build Plant For Southern Nitrogen

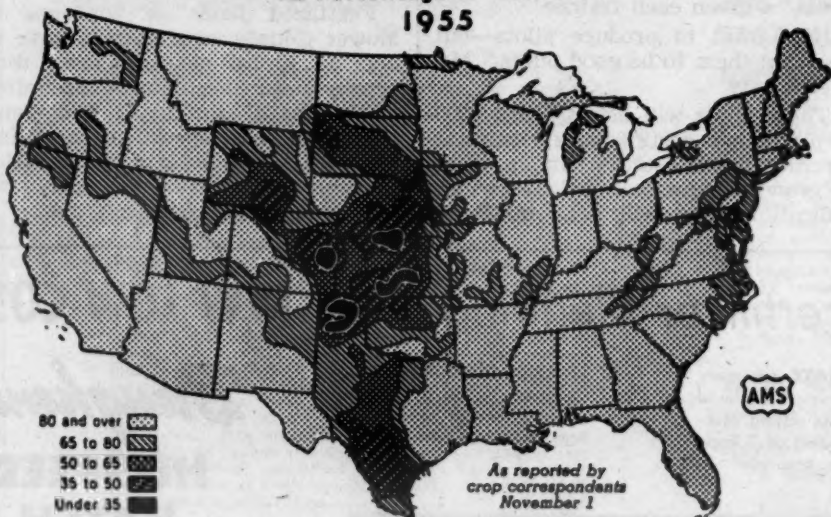
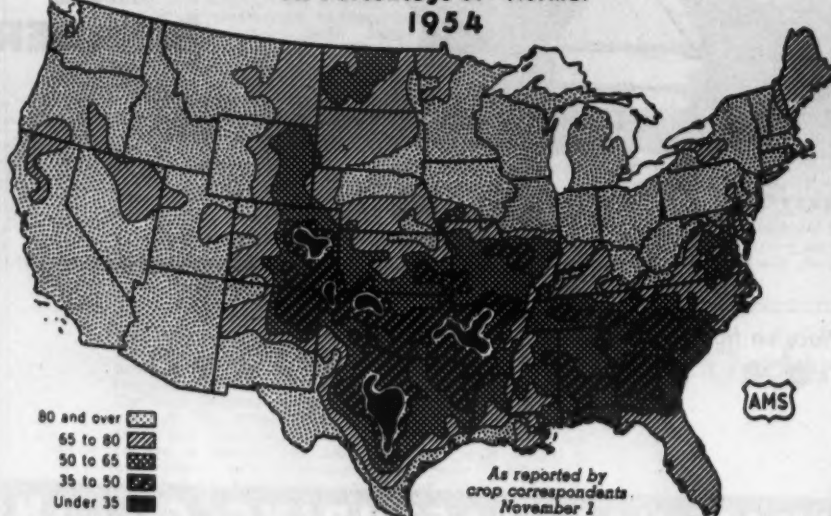
NEW YORK — The Girdler Co., Louisville, has been named as prime contractor for construction of the \$14 million petrochemical plant to be erected in Savannah by Southern Nitrogen Co. P. K. Kintz will be field project manager in charge of the office.

Construction will start this fall on the plant, which will include an ammonia unit with capacity of 250 tons a day and other units to produce nitric acid, urea, nitrogen solutions and fertilizer grade ammonium nitrate. (See page 1 of the Sept. 19 issue of Croplife.)

Organizers of Southern Nitrogen include Malcolm Smith, chairman of the board, John R. Riley, president, and George V. Taylor, vice president.

Dixon to Build Sulfuric Acid Plant

CLIFTON, N.J.—Dixon Chemical & Research Co., Inc., has announced plans to erect a \$2,500,000 sulfuric acid plant in the Newark Bay industrial area. Arthur W. Dixon, president, said the proposed plant will have a capacity of 450 tons of sulfuric acid annually. It is scheduled for completion next summer.

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As Percentage of "Normal"
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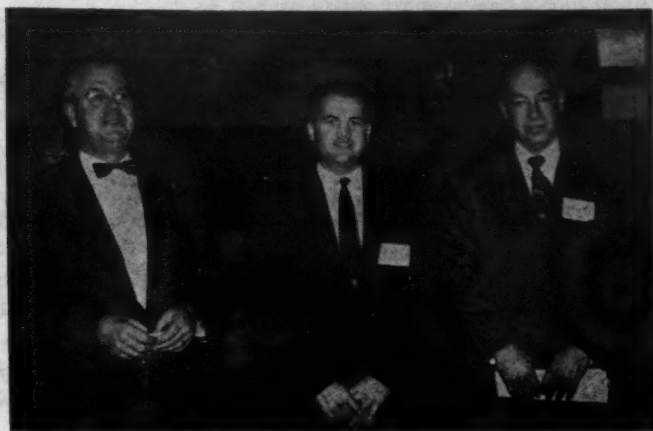
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A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW



PACIFIC NORTHWEST MEETING—Leaders of the Pacific Northwest Plant Food Assn. are shown above during the Nov. 1-3 convention at the Pilot Butte Inn, Bend, Ore. In the left photo from left to right are F. T. Tremblay, Washington Farmers Cooperative, Seattle, retiring chairman of the association's soil improvement committee; Leon S. Jackson, Portland, secretary, and S.

W. Martin, Yakima Valley Spray Co., Yakima, Wash., retiring president of the group. In the photo at the right are Robert W. Finch, Swift & Co., Portland, treasurer; Ben McCollum, J. R. Simplot Co., Pocatello, Idaho, vice president, and Frank Meeker, Meeker Hughes Co., Salem, Ore., president. The photo at the left is courtesy of the Bend (Ore.) Bulletin.

Pacific Northwest Group Hears Reports On Progress of Farm Demonstrations

By WILFRED E. LINGREN
Croplife Editorial Staff

BEND, ORE. — Reports on farm demonstration projects in Idaho and Washington and a progress report on plans for a proposed project in Oregon featured the closing session of the sixth annual convention of the Pacific Northwest Plant Food Assn. at Pilot Butte Inn here Nov. 3.

(Editor's Note: An earlier story on the convention and the report of the Nov. 2 sessions appeared in the Nov. 7 issue of Croplife beginning on page 1.)

The farm projects, in which farms are selected, fertilizer furnished free and technical advice given by the soil improvement committee of the association, are one of the main activities of the fertilizer group.

The Nov. 3 session, under the chairmanship of John Hooper, Wilson & Geo. Meyer & Co., Portland, featured reports by Grant Braun, American Potash Institute, Portland, on the new Idaho project; by F. T. Tremblay, Washington Farmers Cooperative, Seattle, on the Washington projects, and by Thomas Jackson, soils department, Oregon State College, Corvallis, on the proposed Oregon project.

The Idaho demonstration project, now about six months along, is on the farm of Blaine Marks located near Sand Point, Idaho, in a livestock area. Mr. Braun pointed out that the main objectives of the project are to increase forage production and to show the increase in a medium such as "more milk in the bucket," bringing the value of the recommended practices down to a dollars and cents reality.

The Marks farm, Mr. Braun reported, was chosen for the project because it was a low-production unit. Grain production, for example, was as low as 8 bu. to the acre, he said, and Mr. Marks had to work at side-lines in the community in order to support the farm and his family of eight children.

The three-year project is under the guidance of a technical committee, composed of the county agent and other farm advisers, which makes recommendations on fertilizer use and other farming practices. An "over-all committee" composed of 32

representatives of local organizations and news outlets is also interested in the project and will handle promotion of the results and recruit additional local support. Fertilizer for the project is to be furnished the first year by the association, the second year by the local groups and the third year by the farmer.

After six months under the project milk production has increased, forage production and grain production are up and the net income of the farm has more than doubled, Mr. Braun reported.

"The indications are that the Idaho project will be a very successful one," he said, as he outlined the plans

for the continuing operation of the project and the promotion of its results.

Mr. Tremblay reported on three farm demonstration projects now underway in Washington, presenting colored slides showing "before and after" views of the fields involved.

On the Brad Benedict farm near Linden, Wash., silage production has increased from 49 tons in 1951 to 412 tons this year and the farm is supporting a steadily increasing herd. In 1951 the farm had 23 head of cattle, a herd which has increased by 1955 to 27 milk cows, 27 yearlings and more than 17 calves, a total of 65 head. The butterfat average for

(Continued on page 12)



SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN

In areas of the country where self-service merchandising has made considerable progress because of faster customer acceptance, the farm supply dealer is losing many sales if he hasn't made provision for a self-service department. Undoubtedly, self-service shopping has made as much headway in California as it has in any section of the nation. Dealers in that state and in other western states might well take a look around to see what's developing in self-service in other lines. The neighborhood supermarket is a good place to look.

Naturally, the farm chemicals dealer cannot adopt a complete supermarket plan of operation. Sales of fertilizers and other farm chemicals need the personal attention of a salesman.

But what about the gardener, the lawn tender, the flower enthusiast, and the part time farmer who wants to buy his fertilizer in 5-, 10- or 25-lb. bags? Or the prospect who is just browsing around and happens to think that he needs a rake, some crab grass killer or insecticide. Others might be potential customers for seeds, pet supplies or flower pots.

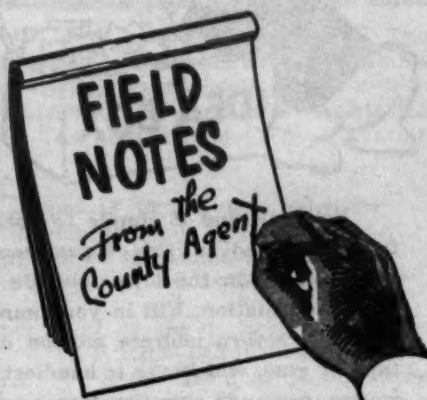
A self-service department is an ideal way of catering to potential customers of the above products. Attract the shopper who comes in for a specific item but "just happened to see something he needs."

Label the self-service department with a prominent sign saying, "Help Yourself."

The self-service counter is like an extra salesman standing by, asking customers to make an additional purchase or two. Some folks call this impulse buying. Self-service displays just naturally stimulate more impulse sales. Customers see all kinds of products they need or would like. A self-service display can inoffensively suggest impulse buying.

Self-service displays require that products be prominently price

(Continued on page 15)



By RAYMOND ROSSON

County Agent, Washington County, Tenn.

This is Thanksgiving week, and we are thankful for our churches in town and rural communities. The future of the church in the rural sections of our great country is increasingly a matter of common concern. It is a recognized fact that the health and stability of our national life are largely dependent upon an economically sound and morally wholesome agricultural foundation.

The agricultural extension people are demonstrating their interest in the welfare of the people who live close to the soil and are seeking to raise the level of life in rural areas. None of these efforts, however, can successfully deal with the problem apart from an underlying Christian culture which only the church can create.

We can think of no better "set up" for church workers and their pastors, than is found in the well organized community clubs.

Any consideration of rural life must take the church into account, for the church plays an important role in the rural community. Its influence is a force to be reckoned with, whatever the quality of the influence, whether it be positive or negative, unifying or divisive.

Unless the Christian faith can be related to the everyday living in the community, it is irrelevant to the actualities of life. The contribution of church leadership is effective only to the degree to which it is mediated down to the "grass-roots" and helps people to improve their personal and community life.

Local church leadership can improve community living by helping to increase the income of farm families, promoting correct soil use, developing better family relations, promoting family health, and helping provide educational and cultural opportunities and by helping create a sense of the interdependence of the local community with its country, region, nation and the world.

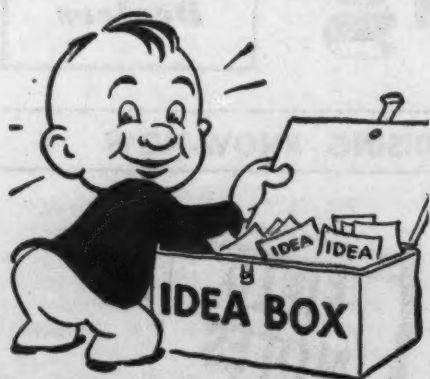
Oregon Rancher Named Grassman of the Year

PORTLAND—Lloyd Gift, Klamath County rancher of Bonanza, Ore., was named Pacific Northwest "Grassman of the Year" at a recent luncheon sponsored by the Portland Chamber of Commerce. Mr. Gift competed with Eugene Bauer, Woodland, Wash., dairy farmer, and Leo Rice, Gooding, Idaho, rancher for the honor. Mr. Bauer and Mr. Rice were named Grasslands farmers for their respective states.

Improvement of 6,000 acres of rough range lands in Klamath County resulted in Mr. Gift's selection. He collected \$1,500 in awards winning the title.

Better Selling

Richer Sales Fields for Dealers



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6344—Lawn Machine

Franchises are now available to dealers for a new machine, called by the trade name, Lawnscape, announces the manufacturer, Lawnscape Corporation of America. It is claimed to perform the numerous lawn care functions previously done by hand or by several machines. Franchise rights



include exclusive right to work in a territory of approximately 10,000 population. Rights also include basic materials with which to service 50 average size lawns, the company announcement states. The machine's basic unit is a 24-in. dual rotary type mower. A rack attachment can hold four fibre drums for seed, fer-

tilizers, weed killers, insecticides and grub killers. The entire system can be controlled from the driver's seat. Also available is an aerator set and a water filled roller. Secure more complete details by checking No. 6344 on the coupon and mailing it to Croplife.

No. 6346—Potash Handling

Field Report No. 227 from Sauerman Bros., Inc., describes the handling of potash in indoor storage at Carlsbad, N.M., by scraper storage machine. The report is illustrated with layout drawings and pictures which show the plants of two major potash producers. To secure the report check No. 6346 on the coupon and mail to Croplife.

No. 6345—Transport Unit

Schelm Brothers, Inc., announces the production of its new nitrogen solution transport unit which consists of a 500-gal. aluminum pressure tank and skid mounted on a two-wheel trailer. The trailer is constructed to handle a three-ton load and may be

equipped with electric brakes if desired. A spray boom is available for non-pressure type solutions. When used as a nurse tank, hoses and fittings are available for either dip tube or bottom withdrawal of solutions. A small compressor and gasoline engine mounted on the trailer supply the air pressure. Complete information and prices are available by checking No. 6345 on the coupon and mailing it to this newspaper.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6332—Brochures

The Elsevier Press, Inc., has announced the availability of three brochures describing publications of technical interest. They are: 1. A 52-page brochure describing in detail Elsevier's Encyclopaedia of Organic Chemistry. The encyclopaedia, 14 volumes now published, is an exhaustive, comprehensive description of carbon compounds—their chemical, physical and chief physiological properties. 2. A 30-page catalogue of Elsevier's Scientific and Technical Publications. 3. An eight-page brochure describing Elsevier's Chemistry of Carbon Compounds series. Secure the brochures by checking No. 6332 on the coupon and mailing it to Croplife.

No. 6341—Storage Tank Liners

A brochure has been prepared by the Flexi-Liner Co. on its storage tank liners, called by the trade name, Flexi-Liners. According to the brochure, the liners are liquid-tight, flexible cylindrical sacks made of special plastic sheeting. The large bags are for installation inside storage tanks to prevent corrosion of the tanks and to protect contents from iron contamination by the tank. Secure the brochure by checking No. 6341 on the coupon and mailing it to this newspaper.

No. 6334—Loader

A new and larger two-wheel-drive "Payload" tractor-shovel, model "HAH," has been announced by the Frank C. Hough Co. The model, which has a struck capacity of $\frac{3}{4}$ cu. yd. and a heaped capacity of 1 cu. yd., incorporates all of the features of the smaller "HA" model which was introduced last February. One fea-

CROPLIFE, November 21, 1955

ture is the bucket breakout action which permits 40° of tip-back ground level. The new model "HAH" has a breakout force of 4,500 lb., lifting capacity of 4,000 lb. and carrying capacity of 3,000 lb. 4 m.p.h.

Especially designed for stockpiling work, this new unit has a short turning radius and rear-wheel power steering. The high lift of 7 ft. 9 in. enables it to load trucks or elevators. Secure more complete details by checking No. 6334 on the coupon and mailing it to this publication.

No. 6342—Plastic Drum Faucet

A polyethylene plastic drum faucet has been introduced by the Multi-Meter Corp. Designed to fit all $\frac{1}{2}$ in. standard drum openings, this new full-sized faucet is claimed to be durable and light weight. Polyethylene construction prevents reaction with strong acids, alkalis, oils, etc. Secure more complete information by checking No. 6342 on the coupon and mailing it.

No. 6337—Absorptive Bulking Agent

A new line of synthetic calcium silicates trade-named "Micro-Cel" has been announced by Johns-Manville Corp. The material has been proved as an absorbent-grinding aid for high liquid concentrate insecticide wettable powders and as an anti-caking



agent in fertilizers and insecticide dusts, according to the manufacturer. The makers say it will absorb on to $2\frac{1}{2}$ times its weight of liquids and still remain a free-flowing powder. (See photo which shows a gradual of water being added to the product with the result that the product will still flow.) Bulk density ranges from five to 15 lb./cu. ft., according to grade. Fast, uniform blending without segregation is listed as one of its characteristics. The material is inert with a pH range of 8.0 to 10.0. For more details, check No. 6337 on the coupon and drop it in the mail.

No. 6340—Applicator

Schelm Brothers, Inc., is now manufacturing and distributing a nitrogen solution applicator designed by W. A. Senesac. Called by the trade name, Senesac-Schelm "do it yourself" applicator, the unit comes equipped with a 100-in. tool bar and four knives. Tool bar extensions and extra knives are available to give 160-in. row coverage with any desired knife spacing. A spray boom is available to convert the unit into a trailer spray for applying non-pressure solutions or insect and weed chemicals. Controlled air pressure is supplied by a mounted compressor. Check No. 6340 on the coupon, clip and mail it to secure more information.

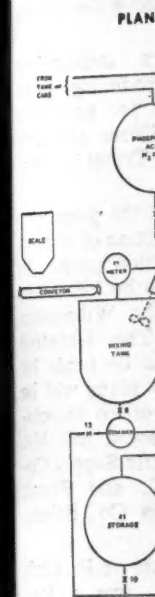
No. 6339—Insecticide

A detailed description of methyl parathion, an organic phosphate insecticide recommended for the control of aphids and spider mites on cotton, is contained in a new technical bulletin published by Monsanto Chemical Company's Organic Chemicals Division. Company officials stated that "methyl parathion, like para-

thion (Monsanto's) is relocating where it has proved methyl parathion against it is included in the recommendation for cotton experiments now in progress. Good potentials against aphids on alfalfa are included in the tests including methyl parathion and mosquito larvicide. Methyl parathion is registered for use in a variety of horticultural compounds and through a higher volume of methyl parathion fumigant products. Secure the bulletin by checking No. 6339 on the coupon and mailing it to Croplife.

No. 6338—Fertilizer

Literature concerning instructions for liquid fertilizers has been prepared by Steel Manufacturing Co. The types of raw



together with large schematic similar to the included with literature notes. The instructions will help easily and efficiently designed to help fertilizer for raw materials. The literature by the coupon and mail

No. 5321

The Chantliff has available its conveying catalog. The catalog is a list, fact sheet, illustrations and The company Elton line, a wide variety of bales, boxes, and roller curbed mode catalog. Sec charge by c coupon and cation.

No. 633 For To

Literature agricultural been prepared by the Co. T. Aquacels, in powders, in water, always tive. Effective tants, insect powders a dip coating

Send me information on the items marked:

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| <input type="checkbox"/> No. 5309—Accounts Receivable | <input type="checkbox"/> No. 6338—Production Literature |
| <input type="checkbox"/> No. 5321—Catalog | <input type="checkbox"/> No. 6339—Insecticide |
| <input type="checkbox"/> No. 6332—Brochures | <input type="checkbox"/> No. 6340—Applicator |
| <input type="checkbox"/> No. 6333—Field Speedometer | <input type="checkbox"/> No. 6341—Tank Liners |
| <input type="checkbox"/> No. 6334—Loader | <input type="checkbox"/> No. 6342—Drum Faucet |
| <input type="checkbox"/> No. 6335—Toxicant Vehicles | <input type="checkbox"/> No. 6344—Lawn Machine |
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| <input type="checkbox"/> No. 6337—Absorbent Agent | <input type="checkbox"/> No. 6346—Potash Handling |

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COMPANY

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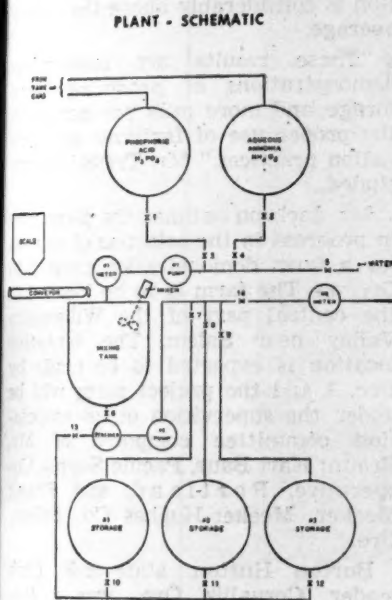
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on (Monsanto's Niran), is non-translocating when applied to foliage. It has proved more effective than parathion against cotton boll weevil and is included in the official recommendation for cotton insect control. Experiments now in progress indicate good potentials for the compound against aphids on grapes, aphids and weevils on alfalfa, and several other pests including beetles, caterpillars and mosquito larvae. Combinations of methyl parathion and parathion are registered for use in California on a variety of horticultural crops. The two compounds are very similar although a higher volatility is indicated for methyl parathion, imparting better fumigant properties to a spray." Secure the bulletin, 0-55, by checking No. 6339 on the coupon and mailing it to Croplife.

No. 6338—Liquid Fertilizer Production

Literature containing operating instructions for liquid fertilizer production has been prepared by the Standard Steel Manufacturing Co., Inc. The types of raw materials are listed,



together with operating details. A large schematic drawing of a plant, similar to the one pictured here, is included with the instructions. The literature notes that "these instructions will help you operate your plant easily and efficiently. They are designed to help you make the most fertilizer for every dollar you pay for raw materials..." Secure the literature by checking No. 6338 on the coupon and mailing it to Croplife.

No. 5321—Catalog

The Chantland Manufacturing Co. has available a new catalog describing its conveyors and allied products. The catalog includes a complete price list, fact sheets as well as numerous illustrations and product descriptions. The company's conveyors, called the Elton line, are available for handling a wide variety of materials in sacks, bales, boxes and in bulk. Conventional conveyors, as well as wheel and roller units in straight and curved models are described in the catalog. Secure the catalog without charge by checking No. 5321 on the coupon and mailing it to this publication.

No. 6335—Vehicles For Toxicants

Literature concerning vehicles for agricultural toxicants has recently been prepared by the Soluble Products Co. The firm's line, known as Aquacels, is described as non-toxic powders, instantly soluble in cold water, always uniform and 100% active. Effectiveness with seed protectants, insecticide sprays, wettable powders and dusts, nursery stock dip coatings and other agricultural

toxicants is claimed. A bulletin on recommended Aquacels for use with various types of agricultural toxicants, together with the conclusion of a typical research laboratory report will be supplied without charge. Merely check No. 6335 on the coupon and drop it in the mail to Croplife.

No. 6336—Applicator

The Pollard Manufacturing Co. has developed a new anhydrous ammonia applicator called the "Nitrogen Prince." The company announcement states that the applicator has "a new and revolutionary design embodying a new application of weight transfer." The new applicator has two wearing surfaces which "make for low up-keep and fast power saving operation," it is claimed. An added feature is adjustable ground wheel spacing as well as adjustable knife spacing. Standard on this machine are 1 1/4 in. double coil spring shanks, fast ball hitch coupling and special alloyed and hardened knives. For further details check No. 6336 on the coupon and mail it to Croplife.

No. 5309—Accounts Receivable

"Simplified accounts receivable for retailers" (SARR) is described in an 8-page folder released by Remington Rand. Based on the company's "simplified unit invoice accounting plan" (SUIAP), "simplified accounts receivable for retailers" uses no accounting machines and requires no highly trained clerks. It is claimed to provide a complete, accurate and fast method of handling accounts receivable. The method uses Remington Rand's Kolect-A-Matic trays, housed in Safe-Ledger equipment for 24-hour protection from fire, and provides an accounts receivable ledger composed of open, unpaid items only, a monthly statement for each customer, and a history of each account. Secure literature on this method by checking No. 5309 on the coupon and mailing it.

No. 6333—Field Speedometer

An all-purpose field speedometer is now being offered by the O. W. Kromer Co. The speedometer can be used to run on the ground or off a smooth tire. It comes complete with a drawbar hitch. The unit can be attached to all types of farm equipment and is claimed to give precise measurement in tenths and hundredths of a mile. It registers all speeds from 0 to 10 m.p.h. and records miles up to 10,000 miles. More complete information may be secured by checking No. 6333 on the coupon and mailing it.

Spraying Eliminates Sand Bur Seedlings, Says California Report

BERKELEY, CAL. — Pre-planting treatment with contact chemical sprays can effectively eliminate sand bur seedlings, concludes a new report issued by the California Agricultural Experiment Station Extension Service of the University of California.

The field sand bur, a summer annual, infests agricultural fields and becomes nuisances to hay, cotton and melons, and the burs are also injurious to grazing livestock. A contact spray should be used just as the weeds emerge, and then the crops should be planted immediately, the report advises.

The report, entitled "Field Sand Bur and Its Control," was written by Robert L. Forsyth, Luther G. Jones, and W. A. Harvey. It is available for distribution upon request to the University.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Acreage allotments for cotton in 1956 were announced by USDA. The new figure is 721,904 acres less than those allotted for 1955. Twenty one states were listed in the allocations. . . . California Fertilizer Associations voted to include aqua ammonia converters and distributors of fertilizers eligible for CFA membership, in an expansion move. The 36th annual CFA convention was held at San Francisco, Nov. 6-8.

The USDA predicted a cotton output of 14.8 million bales for 1955. Harvesting conditions were unusually good this year. . . . Specialty Oil Products announced the sale of its Ammo-Gro Division to a new group incorporated under the name of Ammo-Gro, Inc.

Howard L. Peterson was named president of the Nebraska Fertilizer Institute, Inc., at a meeting in Lincoln. . . . GLF Exchange dedicated its new \$750,000 fertilizer plant at Big Flats, N.Y. . . . Shell Chemical Co., Ltd., and Fisons, Ltd., announced that they would act together in the construction of two new fertilizer plants in England. Total expenditure was announced as \$30,800,000.

Diamond Black Leaf Co. announced Nov. 2 that it would take over operation of Geigy Agricultural Chemical Co. plant at Des Moines, Iowa, on Dec. 1. Emil P. Gerdes, Midwestern manager for Geigy, joined Diamond and will remain in Des Moines.

The need for dealer education and better sales promotion tools were stressed at the annual convention of the Northwest Plant Food Assn. at Bend, Ore., Nov. 1-3. Dr. Russell Coleman, executive vice president, National Plant Food Institute, was a featured speaker.

A heavy explosion ripped through the Velsicol Chemical Corp. plant at Memphis, Tenn., on Nov. 2, killing one worker and injuring 15 others. Cause of the blast was not determined immediately. . . . The Food and Drug Administration extended the date that the Miller Amendment becomes effective on 33 chemical compounds. A group of 20 pesticides were to come under the law on Jan. 22 and 13 others, on March 1.

Potash deliveries in the U.S. and possessions for the first nine months of 1955 were up 7%, according to a report by the American Potash Institute, Washington, D.C.

The U.S. Department of Agriculture reported that consumption of fertilizer-pesticide mixtures totaled 149,100 tons in the 1953-54 fiscal year. This represented a gain from 87,000 tons during a year earlier.

Dr. W. J. Zaumeyer, U.S. Department of Agriculture plant pathologist, told the First International Conference on the use of Antibiotics in Agriculture in Washington that soon antibiotics may be used as widely for plant disease control as they now are for control of human diseases.

M. P. Etheredge, State College, Miss., was named president of the Association of American Control Officials at the group's annual convention in Washington. . . . Clyde A. Bower, Oklahoma City, was elected president of the Association of American Pesticide Control Officials. . . . Curtis A. Cox, Virginia-Carolina Chemical Corp., is new general chairman of the Fertilizer Section of the National Safety Council. . . . The National Nitrogen Solutions Assn. renamed Wayne Johnson, Shenandoah, Iowa, as president.

Davison Chemical Co. Division of W. R. Grace & Co. will build a liquid fertilizer plant at Wakarusa, Ind. . . . U.S. exports of pesticides in the first half of 1955 increased 18% over those during the first half of 1954.

Umbaugh Agricultural Chemical Co., Memphis, announced plans to erect three fertilizer plants, to cost \$10 million, at Walsenburg, Colo. The plants will produce anhydrous ammonia, phosphoric acid and ammonium sulfate phosphate.

Raising corn by modern methods more than doubled yields and nearly tripled returns over methods used 30 years ago in a demonstration conducted on a Red Wing, Minn., farm. The "corn today" yielded 123 bu. an acre and returned \$90 an acre, compared with a 59 bu. yield and \$35 return for the "corn yesterday."

In its annual fertilizer situation report the U.S. Department of Agriculture estimated that supplies of the three principal plant nutrients in 1955-56 would exceed the 1954-55 supply by 2.5%. USDA made these estimates: 2.35 million tons of nitrogen, 4.4% more than the 2.25 million tons in 1954-55; 2.3 million tons of available phosphoric acid, little change; 1.94 million tons K₂O, an increase of 4.3% over the 1.86 million tons a year ago.

Lamar Ratliff, 16-year-old Mississippi 4-H clubber, raised an official yield of 304 bu. an acre on his corn plot.

Traffic experts in the fertilizer field said that the new rates announced by Interstate Commerce Commission on trainloads of commodities from one shipper to a single consignee, will not likely apply to fertilizer. However, it was regarded as a "foot in the door" which might lead to better rates in the future.

Food and Drug Administration used its five-man advisory board to establish a tolerance of one part per million on U.S. Rubber's Naugatuck Division pesticide, Aramite. This was the first time the committee had been called into play. . . . The American Potash Institute, Washington, D.C., observed its 20th anniversary. It was launched in 1935.



FARM SERVICE DATA

Extension Station Reports

Colorado A&M scientists have obtained excellent control of western harvester ants using bait poisoned with heptachlor.

The bait shows promise of being cheap enough to use in large-scale control programs on rangeland—possibly with aircraft, the researchers say.

If tests now under way by Dr. George List, entomologist for the experiment station, are successful, the bait may help bring back into production thousands of acres of western rangeland stripped by the ants.

Concentrations of one part of the chemical, heptachlor, to 400 or 800 parts of cracked wheat gave nearly 100% kill of the ants in the tests. Five grams of bait per colony was enough to do the job.

The cracked wheat bait is important. It should be small enough to pass through a 20-mesh screen. The idea is to fool the ants into thinking the poisoned bait is range plant seed. They store seed in fantastic quantities in their eight-to-ten-foot deep nests. Scientists say this is how they do their worst damage—by robbing rangeland of its scarce seed for revegetation.

In the A&M tests, ants have accepted wet-mix baits better than dry mixes. This is good, because the wet-mix remains poisonous longer; but bad, on the other hand, if precautions are not taken to prevent lumpiness in the bait. It must be spread out to dry to prevent trouble later with distribution.

Dr. List has found no injury from the baits to birds, rodents or other wildlife and range animals.

Fall nitrogen applications will speed growth of annual range grasses in the cool winter months when green feed is in short supply, according to William A. Williams, assistant professor of agronomy on the University of California campus at Davis.

Nearly all natural rangeland soils are deficient in nitrogen, Dr. Williams said. The hot dry summers tend to burn up soil organic matter—the major natural nitrogen source—so more fertilizer is needed when new plant growth begins in the fall.

Dr. Williams also has found that about three fourths of the California rangeland is deficient in phosphorus. Sulfur too is frequently deficient in rangelands in some areas of the state.

SACRAMENTO—Foliar sprays of zinc sulphates and zinc chelates almost doubled the yield of sugar beets in tests performed this year on the Norman Bunnell ranch near Clarksburg, Cal.

The tests were conducted by John Lingle of the vegetable crops department, University of California at Davis. Comparative results of the spray and side dressing tests showed the greater efficiency of the sprays which were applied at the rate of 4 lb. per acre compared with 50 lb. per acre for the side dressings.

"It shows that in cases of deficiency, apparently the leaves can absorb minor elements more efficient-

ly than they can be taken in through the roots," Mr. Lingle said. He added that it probably would not be possible to apply the sprays aerially because of the gallonage requirements.

Oregon farmer battles against insects that attack clover, alfalfa and other legume hay and seed crops have received a boost with publication of a new insect-control bulletin by Oregon State College.

Illustrations and descriptions of 31 injurious insects, parts of legume plants attacked by certain insects and control recommendations are included in the 40-page booklet prepared by entomologists E. A. Dickason and R. W. Every. The bulletin includes a section on mixing and applying insecticides and tells how to identify and protect insects that are beneficial to legumes.

Nitrogen and phosphorus fertilizers can boost milk production by 50%, according to a 3-year experiment at the Afton Substation of the University of Wyoming College of Agriculture. In that period the average carrying capacity of permanent pastures went up 35% and in one of the three years it went up 50%.

With a 92-day grazing period, the increased yield of 1,375 lb. of milk per acre showed a substantial increase in gross return over fertilizer costs.

The University of California's Agricultural Experiment Station has issued an illustrated leaflet to assist California alfalfa growers in identification of the rapidly spreading spotted alfalfa aphid.

Growers are warned in the leaflet that once the aphid has been re-

ported in their area inspection of their fields every two or three days is recommended. Treated fields can be reinfested quickly. One aphid can kill a small alfalfa plant.

The pest is easy to kill but difficult to control because of its rapid reproductive rate and its habit of flying in great numbers, according to the authors, R. C. Dickson and H. T. Reynolds, university entomologists.

Wyoming alfalfa growers may face a rough battle next year with an alfalfa pest new to the state, says T. R. Robb, state extension entomologist. The pest, called the spotted alfalfa aphid, has seriously damaged 1954 alfalfa crops in New Mexico, Arizona and California. This year it invaded Utah and parts of Colorado, Nebraska, Oklahoma, Texas and Kansas. No one, so far, has reported the aphid in Wyoming.

The insect severely damaged some Oklahoma fields this year and built up rapidly in many Texas alfalfa and clover-growing sections. Alfalfa losses from the pest in New Mexico in 1954 came to an estimated \$4 million. It killed about 90% of spring-seeded stands and nearly 75% of the preceding fall-seeded stands in the Pecos Valley there that year.

In the Pecos Valley it reduced the number of years an alfalfa stand will last from 4 years to about 2. Estimated losses in 1954 were \$500,000 in Arizona and \$337,900 in California.

Satisfactory control measures have not been recommended generally; research on this new problem is going on in infested states. Insecticides that control other aphids—such as parathion and malathion—have been effective against the spotted alfalfa aphid, but repeated applications are necessary to keep the pest controlled, Mr. Robb reports.

NEW IRRIGATION LINE

FARWELL, TEXAS—Gifford-Hill-Western of Lubbock, Texas, is building a new concrete irrigation pipe plant here in Farwell.



WARFARIN SHIPMENT—An airborne blitz against rats on the West Coast was launched from Louisville recently when Diamond Black Leaf Co., Cleveland, shipped 50 cases of Warfarin rat bait via air freight to Portland, Ore., where a two-week, community-wide war against rodents was being waged. The shipment contained 1,200 lb. of the chemical—enough to destroy 6,000 of the pests. Present to observe the loading of this unusual cargo aboard an American Airlines DC-6 plane and shown above discussing the operations were, from left to right, Alex Parsons, American Airlines operations manager, Louisville; Fred Bray, Diamond Black Leaf traffic manager, Louisville plant, and H. M. Davis, Diamond Black Leaf sales supervisor, Louisville office.

NORTHWEST GROUP

(Continued from page 9)

1955 is 385 lb., compared with 280 for 1951.

Mr. Tremblay reported the amounts of various fertilizer elements which were used in 1955 as follows: an average of 85 units of nitrogen per acre; 60 units of phosphate, and 100 units of potash on the peat land and 60 on the upland.

On the Balmer farm in Pierce County, Mr. Tremblay reported, the herd has increased from 30 cows and 15 young stock in 1952 to 60 cows and 30 young stock in 1955. In 1952 about \$8,000 worth of feed was purchased, while in 1955 there was sufficient pasture all year and little feed was purchased.

The third Washington state project reported on is the Dell Hastings farm in Thurston County. In 1952, Mr. Tremblay said, the farm would not support five cows. Now the farm has a herd of 50 head and milk production is considerably above the county average.

"These results are outstanding demonstrations of producing more forage and more milk per acre with the proper use of fertilizer and irrigation practices," Mr. Tremblay concluded.

Mr. Jackson outlined the plans now in progress in the selection of an area for a farm demonstration project in Oregon. The farm is to be located in the central part of the Willamette Valley near Salem. The tentative location is expected to be made by Dec. 1 and the project plans will be under the supervision of an association committee composed of Mr. Braun; Karl Baur, Pacific Supply Co-operative, Portland, and Frank Meeker, Meeker-Hughes Co., Salem, Ore.

Burton Hutton, state 4-H Club leader, Corvallis, Ore., was a featured speaker at the closing session of the convention. He cited the importance of proper training of youth to help them assume the responsibilities of adulthood and to insure the continuing growth and progress of industry and agriculture.

Recalling examples of mutually beneficial experiences between young people and businessmen, he urged his listeners to cooperate with projects and organizations in the training and development of youth.

CFA Awards Two Agricultural Scholarships

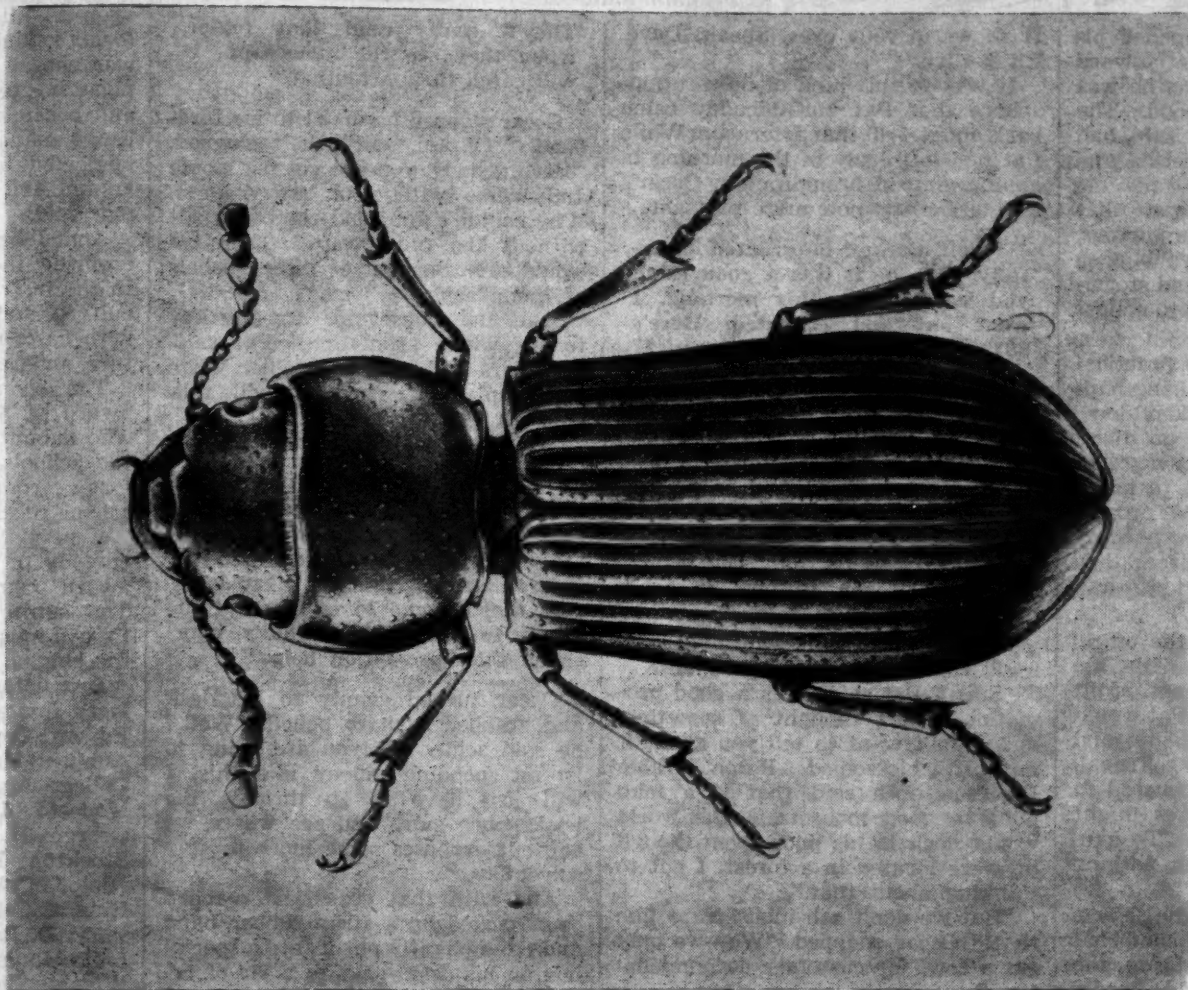
SAN MARINO, CAL.—The Soil Improvement Committee of the California Fertilizer Assn. has awarded two \$100 scholarships to agricultural students of California State Polytechnic College, San Dimas.

Sam Popoff, Los Angeles, a soils student, and James H. Parker, Newberry, Cal., a crops student, were the recipients. Howard H. Hawkins, Glendora, a director, and Sidney H. Bierly, San Marino, executive secretary and manager of CFA, made the presentations at an awards assembly of the student body.

The Soil Improvement Committee sponsors four scholarships annually, each in the amount of \$100, which are given to students at the two campuses of California State Polytechnic College, at San Luis Obispo and at San Dimas. They are given to an outstanding student in soils and in crops at each campus. Students are chosen for the award by the College Scholarship Committee, made up of faculty members.

BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board



Cadelle Beetle

How to Identify

Since this insect is relatively large, in its adult stage, it is usually easily identified. Being from about one third to a half inch in length, the bug can be inspected easily by laymen. Its color is dark, nearly black, and the body is jointed between the head-thorax and rear portion of the insect.

Habits of the Cadelle

This pest can overwinter in either the larval and adult stages, but not in the egg or pupal form. Females of the species are very productive, with egg counts reported as high as 1,300 in a single female. She lays her eggs on or near food, but nearly always in some protected place such as cracks in a granary wall or under the lid of food cartons. Such deposits are usually made in groups of from 15 to 60. From ten days to two weeks later, the larvae hatch. They are grayish-white, soft-bodied creatures with black head. Hardy animals, they may delay their development for 10 to 14 months if conditions are unfavorable, but under ideal conditions, may complete their development in less than 3 months. Having reached the pupal stage, the insect stays in

hiding places in walls and cracks from where it may be able to reach its food supply, grain.

Damage Done by Cadelle

Called "the most troublesome of the boring insects," the Cadelle feeds on a wide variety of stored commodities and is widely distributed throughout the U.S. It is primarily a pest of grain and flour and is commonly found in railway box cars, ships, warehouses, farm granaries and other places in which food-stuffs are stored or transported. The larva, which bores into woodwork where it transforms into its pupal stage, has jaws powerful enough to eat through many types of packages. It will cut through multiwalled paper bags or metal-foil-wrapped cartons overnight.

Control of Cadelle

A number of methods of both control and prevention against the Cadelle and other grain-infesting insects have proved effective. Because of differing recommendations in states and regions, local advice should be sought from county agents and state experiment station entomologists. Control methods of course include fumigation and/or use of other types of pesticidal chemicals.

Illustration of Cadelle furnished Croplife through courtesy of U.S. Department of Agriculture.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.



As Oscar Schoenfeld propelled his bulky figure down the street toward the fertilizer and farm store, he was in one of his rare genial moods. The reason was that Minnie, his wife, had prepared an excellent spareribs and sauerkraut lunch, with apple pie and coffee. Another reason was that Oscar had finally nagged his partner, Pat McGillicuddy, into grabbing a list of delinquent accounts and storming out of the office, vowing to collect most of it.

"Somebody has got to be practical about this business," Oscar sang happily to himself as he walked down the street. "We just can't go along week after week spending money like drunken sailors and expect to make a profit. Advertising, sales promotions, bargains, specials — phooey! When farmers need fertilizer, they know where they can get it—and good stuff, too!"

The rest of the way to the office, Oscar tormented himself with the thought of all the extra net profit the company would have if Pat would only tone down his advertising and sales promotional expenses. Frugal, penny pinching, it never occurred to Oscar that such expenditures might help bring in more business. To him, they were just expenditures, nothing more.

Now he stepped into the office, jauntily removed his coat and hat and hung them up. Tillie Mason, the plumpish bookkeeper, could hardly believe her eyes. Had Oscar inherited some money? That and nothing else could be responsible for his approach to a genial state of being.

But just then Oscar's watchful eye caught sight of three bushel baskets standing on the floor, and a frown spread swiftly across his broad face.

He stared unbelievably at the bushel baskets, then reached down and picked up one of the items. "Mousetraps!" he said hoarsely. "Three bushels of mousetraps! How in the world did they get here?"

"The—the delivery man from the hardware store brought them about a half hour ago," Tillie said nervously. "He—he said Pat ordered them."

"Pat!" echoed Oscar angrily. "So he's at it again. More spending. More foolishness. Well—those mousetraps are going back. We sell fertilizer, not mousetraps. Why, why we've already got plenty of unsold mouse seed Pat bought six months ago."

He grabbed the telephone, when Tillie spoke up anxiously. "Oh, Mr. Schoenfeld, please don't," she begged. "Pat will get so angry. Wait until he comes back. Then talk it over with him."

"Talk it over!" yelled Oscar. "When he buys three bushels of mousetraps that's my money as well as his he is using. Ach, Himmel, such a partner. He must think we can sell anything. He must think we have money to burn. He must—"

But Tillie didn't hear the rest, for she fled tearfully into the washroom. Looking at her tear stained face in the medicine cabinet mirror, she pleaded, "Oh, Dave, Dave, why don't you ask me to marry you, so I can get out of this place? I—I can't stand this fighting much longer. Don't be so bashful, Dave. I know you love me."

It shows in your eyes. Speak, Dave. I'll say 'yes'."

It was to this kind of office atmosphere that Pat McGillicuddy came back about 4:40 that afternoon. While Pat had left early in the morning in an angry mood, brought on by Oscar's taunts, he was now more pleasant.

"Well, Oscar," he granted cheerfully. "Maybe it was a good thing you needled me this morning. I went out and collected. Here's \$970. How's that for a day's work?"

Oscar grunted and took the money and the list. "Huh, it's a start anyway," he said ungraciously. "But—but what about those three bushels of—of mousetraps?" And he pointed at the merchandise.

"Oh, that!" Pat laughed. "So they came. I'm glad of that. The printer should bring the stuffers or cards first thing in the morning."

Oscar's face went white. "Printing!" He envisioned more expense.

"Sure," Pat said. "It's a good promotion idea I thought of sometime ago. Didn't want to tell you about it until it blossomed. Ralph Waldo Emerson once said that if a man made a good mousetrap, the world would flock to his door, even though he were located in a forest. I got to thinking about that."

"But we don't sell mousetraps like that!" Oscar snapped. "We—we only got a few, for customer accommodation."

"I know, I know," Pat replied. "But we pride ourselves on knowing a lot about the fertilizer business. So I have had a little cardboard folder printed, telling customers about this saying of Emerson's, and how we find customers coming here from all parts of the county to buy fertilizer because they know we know our stuff. I list the products we sell, and why farmers can and should buy fertilizer, insecticides and other farm supplies from us. I tell them how to take soil samples, how to fertilize per acre for various crops, and invite them to talk over land fertility problems with us at any time."

"Huh."

Pat grinned. "There's a little hole in the corner of each card. Nora and I will tie a string to the card and then to a mousetrap. I will deliver one of these cards to every farmer in the area sometime during the next few months."

They'll really read that folder, when they see the mousetrap. It will catch their attention."

Oscar slapped his hand to his forehead. "Oi, oi, oi!" he groaned. "McGillicuddy, you are getting worse and worse with your crazy ideas. Why couldn't you send the cards out without the mousetraps? Then we would save the cost of three bushels of them."

"But the mousetraps are the key to the whole promotion," Pat said. "Farmers will read the folder when the trap is attached. They'll talk about it."

"Will they buy fertilizer?" Oscar asked hostilely.

"You bet they will, Oscar," said Pat firmly. "If we can get farmers thinking about us and our service more than they think of other dealers they'll come to us more often than to the others. That's why good sales promotion helps."

Oscar turned grimly to his desk and grabbed a sharp pencil. "Well," he said acidly. "If you are going to go on spending money like this, I will just have to go through the books once more and see where we can cut expenses some more to stay solvent."

And with that crack, he reached over, picked up a stray rubber band and triumphantly put it into a special box on his desk, next to a jar of retrieved paper clips.

Washington Weed Group Votes to End Formal Organization

TACOMA — The Washington State Weed Assn., which met here recently, voted to dispense with formal organization and held no election. Leaders of the association said that the formal organization would be replaced by open public conferences, to be alternated between western and eastern Washington.

The need for roadside weed and brush spraying was emphasized at the meeting by Auburn L. Norris, Yakima, weed supervisor for the state Department of Agriculture, and his co-worker, Larry Semler, state weed specialist.

"If roadside brush is sprayed and fought back for two years, it will be permanently gone," they said.

120-ton Aerial Fertilization Project Completed on Northern California Ranch

NAPA, CAL.—One of the largest aerial fertilization projects in northern California has been completed on the D. E. Alexander ranch near Napa by Westair Service of Rio Vista, Cal.

A total of 120 tons of commercial nitrogen and phosphorus was dusted by two biplanes from 150 ft. altitude.

Mr. Alexander contracted for the job after experimenting last year on 140 acres and observing results of two years of study by the University of California.

Irving Grover, farm adviser, said that on the Alexander ranch the soil is deficient in nitrogen and phosphorus. The result is that grass is good only in the spring. The dusting supplies the deficient chemicals with the result that grass grows in cold weather as well as in warm. With year-round grazing available, less supplementary feeding is required with resultant savings to the cattle breeder and feeder, Mr. Grover said.

He estimates 10 million acres of presently wasteland in California could be converted to pasture for beef cattle by fertilization from the air.

CFA Announces Subject for Fertilizer Essay Contest

SAN MARINO, CAL. — The Soil Improvement Committee of the California Fertilizer Assn. has announced the subject of its 1955-56 Fertilizer Essay Contest, "Use of Fertilizer on Pasture and Range Lands."

Forrest Fullmer, chairman of the sub-committee on vocational agriculture, said that the annual contest is open to all vo-ag students at California's junior colleges. This subject was chosen because of its broad application to all areas of the state, and because the field of pasture and range management has been largely neglected to the detriment of meat animal and dairy farmers, Mr. Fullmer said.

Announcements containing rules covering the contest have been sent to the instructors of vocational agriculture, and they have been supplied with basic research material on pasture and range fertilization.

The committee presents a grand award of \$100 cash to the student who submits the best essay from all the schools. The author of the best essay from each other competing school receives \$25 in cash.

A perpetual trophy remains in the custody of the school of the grand award winner for the ensuing year. The subject is changed each year. Essays must be completed and ready for judging by April 15.

Instructors of California junior colleges invited to participate include Edward Court, Sierra Junior College, Auburn; Mr. Wettstein, Yuba Junior College, Marysville; Luverne Donker, Modesto Junior College, Modesto; George J. Olney, Stockton College, Stockton; Kenneth Houtby, Reedley Junior College, Reedley; Fred V. Knight, College of the Sequoias, Visalia; D. Ross Webster, Mt. San Antonio Junior College, Pomona; R. Wignall, Chaffey College, Ontario; L. E. Aspinwell, Ventura Junior College, San Marcos; Mel Porter, Paloma Junior College, San Marcos; Howard Dosch, Oceanside-Carlsbad Junior College, Oceanside; Paul Andrew, Santa Ana Junior College, Santa Ana; Ben B. Waid, C. W. Pierce School of Agriculture, Canoga Park; Richard Barrett, Orange Coast College, Costa Mesa, and E. L. Rodieck, Fullerton Junior College, Fullerton.

Guar Growing in Popularity as Crop in Southwest

WELLINGTON, TEXAS — Guar seems well on its way to becoming both a cash and a soil-building crop in this area. This year the production will average about 500 lb. to the acre on an estimated 8,000 to 10,000 acres.

A recent visit by John Esser, manager of the General Mills guar plant at Kenedy, Texas, verified the growing popularity of guar in the Southwest. Mr. Esser said heavy rains had caused some damage to local crops but the darkened seed which would not be used for processing could still be used for next year's planting seed. He thinks that 80 to 90% of this year's production will be suitable for milling.

The guar crop is selling at \$3 to \$3.50 bu. A bushel of guar weighs about 58 or 59 lb. Mr. Esser said General Mills was ready to buy the guar that this area could produce.

He told producers that guar gave a twofold profit. It not only ranked with other crops in cash return, but it is one of the best soil builders known. He said it was very effective in breaking up a plow pan and loosening the soil so it would soak up water.

Farmers Program

STATE COLLEGE — The program being Mexico A&M College men with farm research and "farm" in near region in New farmers thought themselves, and w the benefits c five to ten y mally would.

The program college's new cultural Serv Dr. P. J. Leye of assistants C Nakayama. I tion.

Each fall, men hold s farmer repre throughout N they discuss problems of and the answe which college for demonstr most vital res out," and lo make availab own farms t grounds" in

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Through his farm, a man discove up to 95% his establish only 75¢ an acre of 2.4-I college exte Cooperati ty harvested test plots c higher than their farms methods re

Farmers Profit From New Mexico A&M Program of On-the-Farm Demonstrations

STATE COLLEGE, N.M. — A new program being carried on by New Mexico A&M College teams up college men with farmers in demonstrating research findings "down on the farm" in nearly every agricultural region in New Mexico. The state's farmers thought up the idea themselves, and with it, they're reaping the benefits of farm research from five to ten years before they normally would.

The program is operated by the college's new Department of Agricultural Services, and directed by Dr. P. J. Leyendecker, with the help of assistants Grafton Henry and Roy Nakayama. Its method is cooperation.

Each fall, college and extension men hold special meetings with farmer representatives in counties throughout New Mexico. Together, they discuss the chief agricultural problems of the particular locality, and the answers to these problems which college researchers have ready for demonstration.

The group chooses several of the most vital research projects to "prove out," and local farmers agree to make available large plots on their own farms to be used as "proving grounds" in the program.

From then on "team spirit" takes over. The college staffers and county extension agents provide guidance and materials for carrying out the projects. The local farmers supply the land, labor and equipment needed. Commercial firms often pitch in with free fertilizer, seeds and chemicals.

The "cooperator-farmer" treats his proving-ground plot in just the same way as his other acres, except for the requirements of the particular project under way. Thus, findings arrived at on small experimental plots at A&M get the test of actual on-the-farm conditions in other regions of the state.

Each proving ground is marked with a large red and white sign, easily visible from the roadside, and telling the basic facts about the project being carried on. Farmers drop by regularly at the posted plot, studying closely the progress of the project from start to finish.

Says one up-state farmer: "I've never found time to drive all the way to the college and tour the experimental farms there. But with my neighbor up the road cooperating in this new program, it's like having a little experimental farm almost in your own backyard."

Do New Mexico farmers think the new program is worth while? Ask cooperator Ed Payne of Virden, N.M. The demonstration project he helped carry out on his farm brought about a barley yield on the test plot that was more than double the yield of his other acres. By spreading 96 lb. of nitrogen and 67 lb. of phosphoric acid per acre on the plot (as called for by the project), Mr. Payne got 39 bu.—and a profit of \$33.65—more per acre than on his other fields.

Through the test project held on his farm, a Bernalillo County dairyman discovered that he could control up to 95% of tansymustard weed in his established alfalfa at a cost of only 75¢ an acre. He used ½ lb. per acre of 2,4-D as recommended by the college extension men.

Cooperating farmers in Luna County harvested cotton yields from their test plots of up to a bale an acre higher than the remaining fields on their farms. They used fertilizer methods recommended by the col-

lege experts, to get the increased yields.

The college's on-the-farm demonstrations cover tests of fertilizer applications, crop varieties, insect and weed control methods, ways of planting, tilling and irrigating. All the leading New Mexico crops and farm enterprises are included.

Last year was the program's first. During 1954 New Mexico A&M researchers and farmers of the state teamed up on 192 separate demonstrations on 120 different farms and ranches in 27 of New Mexico's 32 counties. This year the program is equally as big, reaching even to such remote New Mexico hamlets as Questo, some 300 miles from college headquarters.

"The man who deserves the credit," points out Dr. Leyendecker, "is the New Mexico farmer himself. He conceived this program—and he's making it work."

OVER THE COUNTER

(Continued from page 9)

marked. Nothing frustrates the interested prospect more than not being able to find a price mark on a product, requiring him to look around for a clerk to give him the information. Often the prospect just won't bother to find out the price because he doesn't want to be embarrassed by asking. Shoppers want convenience in the store and marking items with its price adds to convenience shopping.

Successful Promotion

A month ahead is not too early to announce a promotion such as an anniversary sale, one California dealer claims. "We began a month ahead of the event to develop reader interest through the local paper," this merchant says.

The ads and stories talked about the coming anniversary sale, the store, its founding and individuals connected with the store.

Two weeks before the anniversary the dealer entertained his neighboring merchants at a buffet lunch, during which he told them of his sale plans, and left it up to them to decide whether they would in any way participate in the promotion. Entertaining the nearby merchants, the dealer felt, came under the heading of "good neighbor" or "good business relations."

Next he sent a letter to his direct mail list, telling his customers about the coming sale. He enclosed tickets good for a series of drawings he planned during the four-day sale event.

The cooperation of suppliers was enlisted and they cooperated with promotional material, displays and merchandise.

A week before the sale, tickets were given with sales. The tickets were good for chances on prizes. No one had to be present to win and all winners' names were posted. The hours for drawings were announced in advance.

Food snacks were provided to visitors during the four days and ladies were given orchids. Clerks wore badges so that identification was easy.

The result, according to the dealer, was a fine increase in sales, plus gaining new customers and making the old ones feel that here was a merchant who wanted and appreciated their business.



RINGING THE cash register

Merchandising Hints for The Retailer

Free Bag Of Candy

A huge Christmas tree will be placed near the check-out counter, according to one retailer who reports on his holiday plans. The tree will have branches liberally laden with bags of Christmas peppermint candy. Any child accompanied by a parent will be able to select a free bag of candy from the tree.

Business Up 65%

Three farm stores who recently conducted "flying saucer" promotions reported big increases in sales. One operator said his business for the week was 65% over any previous week as a result of the stunt. According to the Clover Farm Bee, official publication of Clover Farm Stores Corp., three of its stores staged the "flying saucer" stunt. It consisted merely of dropping paper plates from an airplane. Each plate was marked with instructions to return it to the store for free prizes and special prices. Local newspapers carried announcements of the "flying saucers." Various demonstrations and free refreshments were part of the promotion.

Free Tree Offered

A retailer in Salt Lake City will begin his holiday season Nov. 26 by handing out "Christmas Tree Cards." Every time thereafter that a purchase is made the total amount of the sale will be punched out on the card. When the entire card has been punched, indicating that \$50 worth of merchandise has been purchased, it is to be turned in to one of the employees. A voucher is then exchanged which, when presented by the holder, entitles him or her to a free king-size Christmas tree. A local tree lot will handle the transaction.

Promotions Profitable

One promotion done properly is worth a hundred not done so well. This claim was made at a supermarket convention by one of the speakers. Manufacturers were called to task for developing too many meaningless promotions. Too many promotions which resemble each other kill the impact on consumers. Piling one promotion on top of another also was called meaningless. One buyer pointed out that there are not enough good new sales campaigns.

Get Your Ads Noticed

When planning an ad, the first problem to solve is how to make the ad noticed and read. In a newspaper, one of the best ways to have ads seen is through the use of headings, illustrations and white space. Points to remember in drawing up an ad are: Your ad must attract attention; it must make its points simply and clearly; it must be easily identified; it must be planned for the maximum return. Headings attract attention to the ad. Often they can be written to appeal to the desire to save money or advantages of quality merchandise. Illustrations help make an ad easier to read and more interesting.



Successful Ideas

Some businesses who have unique practices credit them with building trade and enabling the customer to firmly fix the store's name in their minds. Some of the unique practices in successful use are: Keeping a box of pennies handy for shoppers to use in the parking meters in front of the store; providing free coffee for morning customers; free telephone calls; sending post cards to customer-friends when on vacation, and rewarding honor roll students who live on farms with a gift or treat.

No Routine Methods



Anything a dealer can do to make his business noticed and different from those of his competitors will attract more customers. Breaking away from the routine and doing something special always gets more attention than following the trade pattern of other stores. The new and special ideas are not originated by the store—they are the fruit of the manager's imagination. The general public does not produce profit—but individual customers attracted to the store do.

The Khapra Beetle Can Be Liquidated

By Avery S. Hoyt

EDITOR'S NOTE: Avery S. Hoyt, the author of this article, is the director of Crops Regulatory Programs of the U.S. Department of Agriculture's Agricultural Research Service. Among other duties Mr. Hoyt is in charge of all plant quarantine work for the federal government. He has been associated with this type of work for many years. When the Bureau of Entomology and the plant quarantine work were combined into the Bureau of Entomology and Plant Quarantine, he became associate chief, and later, chief of the Bureau and occupied that position when the reorganization of the Department of Agriculture resulted in the dissolution of the bureau. The article contains information of vital importance to the milling industry.

The grain industry in all its branches has good reason to know about grain insects. It is familiar with the damage they cause, the need for effective control, and the urgency of timely attention to new insects that might appear. Despite this there is evidence that the khapra beetle may have been in the San Joaquin Valley of California as early as 1946 even though it was not identified until 1953. In 1946 a warehouse company in Tulare County noticed damage to stored grain which was attributed to one of the usual storage insects. Customary control measures were ineffective. The infestation increased at such a rate that by 1949 the warehouse was abandoned for grain storage. From this warehouse used sacks had been transported to Alpaugh and Angiola in the same county where infestations were discovered in 1953. Khapra beetle is now known to occur in 16 counties in California, 6 counties in Arizona, and 2 counties in eastern New Mexico.

The khapra beetle is native to India, Ceylon, and Malaya. It has become established in England, Europe, USSR, China, Japan, Korea, Philippine Islands, Australia, Madagascar, Syria, Africa, Iraq, and Nigeria. This insect can thrive under a wide range of temperatures and can survive adverse weather conditions. In that regard it can hold its own with other serious pests of stored grain in this country. Temperatures in the nineties Fahrenheit are said to be optimum. The upper limit for development has been placed at 104° F. and although larvae cease to develop at 46° F. they resist exposure to 14° F. for short periods. The life cycle may be completed in as little as 4 to 6 weeks but can be extended almost indefinitely depending upon the temperature and food supply. The adult females lay up to 126 eggs and, in India, records show there may be as many as 12 generations annually. The larvae are highly resistant to starvation, and it is stated that they may live for months or years without food.

In the brief time this insect has been known in the U.S. its importance to the national agricultural economy has been fully recognized. State plant quarantine officials considered of first importance immediate action to stop the spread of this pest. Industry favored an immediate, positive approach to stop further spread and if practicable, to accomplish complete eradication. This thinking led to the promulgation of the federal khapra beetle quarantine which became effective Feb. 21, 1955. With the shipment of material from infested properties restricted by state and federal quarantines, an eradication program was initiated by the states of Arizona, California, and New Mexico in cooperation with the Agricultural Research Service of the U. S. Department of Agriculture and industry.

(1) Light infestations of the

khapra beetle are difficult to find. Repeated inspections seem to be the only offset to this problem at present. Delay in picking up an infestation may result in additional spread. (2) Its habit of secreting itself in cracks and crevices of concrete and wooden storage bins provides good protection from discovery and from killing agents. (3) Available suppressive measures are costly in time as well as in money. If the beetle finds its way into retail establishments and residences, centers of infestation may remain undetected for long periods of time. (4) Railway cars that transported grain from infested premises before the infestation was detected may have become infested and if so provide a possible means of infesting other properties. A complete list of these cars has been made and through the cooperation of the railroad companies they are being made available for inspection as rapidly as possible. (5) The khapra beetle is a notorious hitch-hiker and has been found accompanying shipments of a wide range of products and articles, many of which do not serve as food.

Eradication Factors

There are sound biologic reasons to believe that the khapra beetle can be restrained by quarantine procedures. It is a storage pest that normally is not found out-of-doors. While it has wings, the insect has not been observed to fly and, since it exhibits only feeble migratory tendencies in any stage of development, natural spread may play but little part in its distribution. It seems safe to assume that the spread of khapra beetle is accomplished almost entirely by man in the movement of things with which the insect is associated. If present knowledge of distribution showing infestation confined to limited areas in three states is borne out by surveys extending across the country, the task of halting further spread does not appear insurmountable.

Fewer than half of the 255 establishments in which infestation has been found to date have a history of engaging in interstate business. Practically all of the 45 infestations found during the period June 15 to Aug. 26 are in farm storage units. This would indicate that within the infested states the principal infestations that present a serious hazard of spread have been found. No infestation appears to have survived a "wrap up" fumigation job carried out in accordance with accepted methods.



DAMAGE—This picture shows Khapra larvae on spaghetti and illustrates the damage that can be done by the pest. The photograph is reproduced by courtesy of the Department of Entomology of the University of California, Citrus Experiment Station, Riverside, California.

The khapra beetle is not controlled by the usual measures employed against other grain insects but it is killed in all stages of development by fumigation procedures which have been developed for that purpose. Fumigation with methyl bromide, with the entire infested structure covered with gas-tight tarpaulins, and using an initial dosage of 5 lb. methyl bromide to 1,000 cubic feet has proved to be an effective eradication measure. A concentration of not less than 2 lb. methyl bromide is held uniform throughout the building being fumigated for 24 hours, and the building is kept under tarpaulin for 48 hours. Fumigation techniques with methyl bromide have also been devised for host materials and other commodities moved and stored by the trade.

Sealing Important

Climatic conditions are exceedingly important for successful fumigation. Wind can play havoc with tarpaulins and interferes with the holding of gas concentrations. The seal of tarpaulin with the surface of the ground outside the structure is vital. On a building where many tarpaulins are required to get coverage they have to be attached in a complete seal to each other. This is a tedious, painstaking job requiring many man hours. The heavy dosage of fumigant, the equipment needed to apply it and assure its proper distribution throughout the building when added to the labor required makes this a costly operation. Knowing this, responsible officials are nevertheless recommending fumigation for khapra beetle because they know that 100% effectiveness has resulted in the 67 buildings that have been treated and released and they expect similar results in others awaiting final check.

Of the 255 infested establishments the greater proportion are small and do not entail the extensive treatment just mentioned. Farm storages, feed lots, and some retail stores present a different problem and may be released under much simpler procedures. Some type of chemical treatment is required but in such instances the total effort required per unit of space does not compare with that involved in the larger establishments.

Research on this problem has been expanded by both state and federal agencies. Work is under way directed at the development of additional fumigants and improved methods of fumigation. Practicable treatments are being developed to free seeds,

grains, and various regulated products from infestation. Cooperating in these studies are the Agricultural Marketing Service of the U.S. Department of Agriculture, the Agricultural Experiment Stations of Arizona, California, and New Mexico, the Department of Agriculture of these states, and industry.

The eradication program is cooperative with property owners, state Departments of Agriculture, and the Plant Pest Control Branch of the Agricultural Research Service, participating. The cost of the "wrap-up" fumigation jobs is being shared by the owner or operator, the state, and the federal government. To date more than 20% of the known infested properties have been fumigated and released from regulation, are awaiting further inspection prior to being released, or are under contract to be fumigated. After a complete fumigation no live khapra beetles have been found in the treated buildings. In the fumigation tests made prior to actual commercial treatments no survivors were found in the more than one million beetles used as checks.

Inspection is being improved. As inspectors gain experience in looking for khapra beetles they are developing techniques that are leading to increased effectiveness and that prove helpful in training additional inspectors. No new infestations have been found in New Mexico since Jan. 1 and only 6 in Arizona since July 1. In California between June 15 and Aug. 26, out of 6,500 properties inspected only 35 were found infested. In recent weeks even with an accelerated inspection program the number of new infestations found has been less than the number of fumigated properties that have passed final inspection and been released.

As additional inspectors are trained the areas being covered are expanded. States where no infestations have been found are training inspectors in inspection methods for khapra beetle. It is believed that by repeated inspections in every State accurate knowledge of the extent of the spread may be expected in due time.

Found in Mexico

The fact that this is an introduced insect poses certain questions with respect to precautions that have or can be taken to prevent further introductions. The answers to these questions are not wholly encouraging. As previously pointed out the khapra beetle may be carried considerable distances with products or articles with which it has no biological association. The insect was found in Mexicali, Mexico last December. The finding of infestation in this border city led to a substantial amount of inspection in Mexican mills and warehouses along and adjacent to the border. The Mexican Department of Agriculture is cooperating in this program and further inspections are being made in that country. Shipments from the infested properties in Mexicali offered for entry into this country are subject to the same treatment as that given to shipments from properties found infested in the U.S. Port and border plant quarantine inspectors have been alerted for khapra beetle. Many inspections have been made and a few interceptions have resulted showing that the danger of further introductions exists and that our inspection must not be relaxed.

Complete eradication of the khapra beetle in the U.S. depends on certain rather definite factors. First of these is undoubtedly that of distribution. With more and better inspection methods additional infestations, if any, are more likely to be discovered. Prompt action on newly found infestations reduces the danger of spread from them. The picture within the three states where infestations have been found is brightening daily. There is good cause for optimism if industry continues its support of a strong eradication program.

NEW YORK CONFERENCE

(Continued from page 1)

through effective teamwork among farmers, public agricultural agencies and private companies serving farmers.

Dean Myers emphasized that cooperation of manufacturers and dealers is essential in providing farmers with chemicals. This was held to be a vital factor to make recommended spray programs effective.

Problems involved in the economic control of crop and livestock pests are more difficult today mainly because of the residue requirements of the Miller Bill and the economic squeeze now being experienced by farmers, he said. Reducing costs was seen by him as the most promising way to ease the squeeze.

Dean Myers noted the situation requires a substantial expansion of the research programs of both the agricultural colleges and industry. He suggested chemical companies may be able to help financially by providing fellowships for training men and making grants for fundamental research.

Dr. R. H. Wellman, Carbide and Carbon Chemicals Co., New York, enumerated the responsibilities of industry under the Miller Bill at the Nov. 9 afternoon session. Establishing efficiency, determining residues and knowing toxicology are prerequisite to applying for registration of a new pesticide, he said.

Dr. Wellman noted that industry's responsibility also includes educating farmers through labeling and literature to use new pesticides properly so that residues no greater than those established under the Miller Bill could be expected. Industry is meeting its responsibilities very ably, he said.

The speaker said he believed the Miller Bill will necessitate the search for new pesticides only in those fields where the potential market justifies the increased expense. He said he doubted whether it would be worthwhile attempting to find a new pesticide to control a disease where the increase of the crop would never justify use of the chemical to the extent that the manufacturer could recoup his research investment.

Pesticides in the future, Dr. Wellman said, will be developed only by those companies with sufficient resources and patient money to engage in long-term programs.

Trends in basic and applied research in the organic phosphate field was the subject of Dr. Rosmarie von Simmer, director of research, Chemagro Corp., New York, at the Nov. 10 morning session. Development of pesticides in the past has been based on trial and error methods and most industrial research activities seem to be based on this trial and error principle, she declared. "We must ask ourselves if this method is still adequate," she said.

Other development approaches, Dr. von Rümker said, include arranging molecules to obtain maximum amount of desirable effects and minimum amount of undesirable effects. The plant, insect and toxicant were mentioned as factors to be considered in developing new pesticides.

As an example in considering the plant, the difference between fruits and leaves was cited. It was pointed out that surface of fruits is small in relation to the weight and is generally smooth. Fruits are still developing while leaves have reached full size and relative rate of transpiration is much lower than leaves, Dr. von Rümker said. Another example illustrated was cabbage type plants, where rate of transpiration is faster in outer leaves.

Mode of action of toxicants inside the body of insects was also discussed. In this respect, phosphates were much better understood than other comparatively new pesticides, the speaker said.

Summarizing developments in application equipment for soil pesticides, Merrill L. Adams, Shell Development Co., Modesto, Cal., said that nematicides formulated in granules have made possible new methods for application. A need was expressed for suitable equipment of low cost and simplicity for applying lower pounds-per-acre dosages of granular materials and lower gallonage dosages of liquids.

Commenting on DDT, Mr. Adams said that to his way of thinking, it is not subject to a build up of ear worm resistance as much as some people believe. Mr. Adams spoke at the Nov. 10 morning session.

A guest speaker at the Nov. 9 afternoon session was Dr. John C. Dunegan, Plant Industries Station, U.S. Department of Agriculture, Beltsville, Md. He reported a new method for controlling leaf spot disease of bananas in the West Indies.

Unsatisfactory results with Bordeaux mixture prompted banana growers to develop a new mixture containing 20 liters orchard spray oil, 5 liters diesel oil and 3 kilograms copper oxychloride in 100 liters of solution, he said. Application

was by spraying mist straight in the air and letting it drop down upon the plants. Dr. Dunegan said the method was proving quite satisfactory, with some growers reporting increased weight of stem.

In presenting tentative recommendations of insecticides and fungicides for 1956, note was made of extension service policy in relation to Public Law 518. Material not having label acceptance on a specific crop will not be included in recommendations. If a material is label-accepted for a particular crop, but does not have an exemption or a tolerance under Public Law 518, it will be included in recommendations if it has been granted an extension, subject to withdrawal or continuance based on FDA action. Materials that are label-accepted for a crop and for which tolerances or exemptions are established, will be included in recommendations during any and all parts of the growing season if excessive residues will not result.

DEAN OF AGRICULTURE NAMED

MANHATTAN, KANSAS — The Kansas Agricultural Extension Service along with the Kansas State School of Agriculture and the Kansas Agricultural Experiment Stations are now under one head. Arthur D. Weber, formerly dean of the School of Agriculture and director of experiment stations, will assume the new title of dean of agriculture. Three directors will be named, one for the School of Agriculture, one for experiment stations, and one for Extension Service.

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Donald P. Hopkins

The theme of the book is the necessity of chemical fertilizers to maintain the fertility of the soil. It has concise information on which soil conditions and which chemical fertilizers are most suited for special crops and vegetables. Space is devoted to cereal crops, barley, wheat, oats and rye; to roots and tubers; sugar beets, potatoes, carrots, parsnips and turnips; to vegetable crops, beans, peas, alfalfa, lupines; to grasses and clovers; to onions, flax, kale, cabbages, lettuce, tomatoes, celery, cauliflower and fruits. It clarifies the relationship of manures, compost and chemicals as fertilizers and points out how chemicals should be used to obtain the best results. Its philosophical soundness and logic should do much to avert the confusion of thought introduced by the advocates of compost and manure as against the use of chemical fertilizers \$8.50

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Borer Control Boosts Corn Yields 10-15 Bu.

AMES, IOWA—Treatment of corn fields for control of European corn borers paid off well this year in government research tests carried on at the Iowa State College research farm near Ankeny, Iowa.

Dr. Tom Brindley, head of the federal-state corn borer research laboratory at the farm, said yield increases ranging from 10 to 15 bu. per acre were obtained from a single treatment with various recommended chemicals.

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WORLD REPORT

By **GEORGE E. SWARBRECK**
Cropplife Canadian and Overseas Editor

The first association of fertilizer manufacturers has been organized in India. After several months' delay the Fertilizer Association of India is now operating with the cooperation of the government. Represented are the most prominent producing firms.

The association aims to increase the efficient use of fertilizers in order to grow better crops and to improve production and marketing methods in the fertilizer industry. The first president is A. A. Rahimtulla, Hyderabad Chemicals & Fertilizers, Ltd., with S. M. Smith, Shaw Wallace & Co., Ltd., as vice president.

Mr. Smith said, after the inaugural meeting, that a vigorous campaign for the promotion of the greater use of fertilizers is to be started by the association to make cultivators fertilizer conscious. He explained that the government's five-year plan provides for an increase of nitrogenous fertilizer production from the present 450,000 tons a year to 1,060,000 tons; of phosphates from 250,000 tons to 720,000 tons, and potash from the current 2,500 tons to 20,000 tons.

India has to import a substantial quantity of fertilizers every year and the government hopes that the efforts of the manufacturers will result in a cutback in the requirements from overseas sources.

Mr. Smith also stated that the association is to urge the establishment of better transportation facilities for fertilizers, particularly for those going to the tea-growing industry in northeastern India.

Government Aid

The Indian government is active in the fertilizer industry and is extending its support through state administrations, to private firms. In West Bengal the government has made up its own formula for a fertilizer mixture to be used by the rice growers. This is made and distributed by commercial companies acting on behalf of the authorities.

The government is putting up money for the construction of new production facilities. K. C. Reddy, minister of production, has revealed that the government has sanctioned the expenditure of the equivalent of \$4,760,000 for the expansion of the plant of Travancore Fertilizers & Chemicals, Ltd. This will raise the current output of 45,000 tons of sulfate of ammonia a year to 75,000 tons. Additionally, the factory will produce 30,000 tons of ammonium phosphate and 3,500 tons of ammonium chloride.

Mr. Reddy confirmed reports that the government is planning the erection of three new fertilizer factories. One of these will be at Bhakra-Nangal and work has already started. B. C. Mukharji, managing director of Sindri Fertilizers & Chemicals, Ltd., has been appointed general manager of that project also. Mr. Mukharji was responsible for the erection of the Sindri sulfate factory in 1951. Expected capacity of the new plant is 20,000 tons of ammonium nitrate a year.

Monopoly Charge

The British government is to investigate the fertilizer industry. An announcement by the Board of Trade, a government department, states that the supply of fertilizers has been referred to the Monopolies and Restricted Practices Commission for investigation and report.

Bag Protection

A method of protecting cereals in bags from damage by insects was described by Dr. Bernard Smith at a meeting of the South African Association for the Advancement of Sci-

ence. During the finishing stages of manufacture one side of the jute sacking is treated with 20 mg. of pyrethrin and 200 mg. of piperonyl butoxide per square foot. Dr. Smith says that as a result of this method wheat and corn meal receive full protection for a year.

Mexican Threat

Mexican sources report a new threat to corn crops and pastures in the southern part of Tamaulipas state. In the absence of more definite identification the pest is referred to as "colored fly."

Ramon C. Gonzalez, president of the Ciudad Victoria Cattle Growers Assn., says the insects are spreading rapidly. He has called for government assistance in meeting the plague.

Canadian Merger

The new company to be formed through the merger of the pesticide operations of Canadian Industries (1954), Ltd., and Chipman Chemicals, Ltd., is expected to be working under its new name, Chipman, Ltd., by Dec. 1. (Cropplife, Oct. 10, page 21.)

Phosphate in Israel

Though the Negev Phosphate Mining Co., in Israel is able to meet the demand for phosphate from the local market, it is having to decline requests from export sources, traders report. In a period of four months the company produced 7,000 tons enriched to 28½%. It is hoped to increase enrichment to 30% in the near future. Selective mining methods have been improved and new sorting installations have been supplied.

Plans are being made for the erection of additional equipment and thereafter it is expected that Negev phosphates will be a useful addition to Israel's export potential.

Aiding the development of the phosphate industry is the possibility of improved transportation facilities when the new Beersheba railroad is completed early next year.

Fertilizers for Vietnam

The International Cooperation Administration has announced a list of U.S.-financed awards for Vietnam. Included are fertilizers to the value of \$55,872 f.o.b. Japan is to supply ammonium sulfate and a quantity of undesignated fertilizers. France will supply Reno fertilizers.

D. L. Chapman Joins Balfour, Guthrie & Co.

LOS ANGELES—David L. Chapman has joined the fertilizer division of Balfour, Guthrie & Co., Ltd., the company has announced. He is a 1948 graduate of California State Polytechnic College and was formerly associated with the Fruit Growers Supply Co., in charge of fertilizer purchases.

Practical Aspects of Use of Pesticides Discussed at British Crop Conference

LONDON — More than 400 delegates recently attended the National Crop Protection Conference held at Eastbourne, England, arranged by the Pesticides Group of the Society of Chemical Industry in collaboration with the Ministry of Agriculture, the Association of British Insecticide Manufacturers, the British Agricultural Contractors' Assn., the National Association of Corn and Agricultural Merchants, and the National Farmers' Union.

Emphasis was on the practical aspects of the use of insecticides and fungicides in agriculture and horticulture.

Sir Thomas Dugdale, one-time minister of agriculture in the British government, in his opening address recommended agriculturists to regard such usage as of assistance to, and by no means in replacement of, good soil cultivating husbandry.

An indication of the development of the spraying industry in Britain lay in the fact that whereas in 1949 there were just 4,000 crop spraying machines in the country, it is estimated that today there are over 40,000 crop sprayers in use.

In a general survey of eelworm problems, Dr. B. G. Peters, of the Imperial College, London, drew attention to the increasing menace presented by the different kinds of harmful plant nematodes, as a result in many instances of failure to realize the importance of carrying out correct crop rotations.

Chemical control of these pests was extremely difficult even with the newer materials, as translocated pesticides did not appear to penetrate sufficiently to the roots, while no method has yet been devised to mix efficiently chemicals with the soil down to root level, Dr. Peters said.

In a survey of soil pests which attack vegetable crops, D. W. Wright mentioned that at the National Vegetable Research Station at Wellesbourne researchers had recorded the life cycles of over 30 species of predatory root insects.

On application hazards Dr. Edson announced that blood testing outfits for use in the field were now available, capable of testing 20 men in 1½ hours, thus enabling a constant check to be taken of the blood cholinesterase levels which will give an indication when a man must be

Speakers Named for Western Canadian Weed Conference

WINNIPEG — The program of speakers for the eighth Western Canadian weed control conference, to be held at Regina, Sask., Nov. 29-30, has been announced. The keynote address will be delivered on the first day by H. E. Wood, chairman of the Manitoba Weeds Commission. Mr. Wood will outline the progress made in weed control methods during the past 50 years.

Dr. L. H. Shebeski, head of the department of plant science at the University of Manitoba, will describe how weed competition is affected by time of spraying with weed control chemicals.

Planned is a panel discussion on legislation in weed control programs with Mr. Wood presiding. Members of the panel include T. V. Beck, G. R. Sterling, H. A. Craig and N. F. Putnam from the departments of agriculture in Saskatchewan, Alberta, Manitoba and British Columbia respectively.

Guest speaker at the conference banquet will be T. C. Douglas, premier of Saskatchewan.

rested from the application of toxic materials.

In dealing with the residues problem J. M. Barnes of the British Medical Research Council, referred to the Miller Law of the U.S. and its aim to lay down tolerance limits for residues, more work having been done in the U.S. than in Britain. Opinions differed widely in both countries on the safest minimum residues figures. Among the matters mentioned in this connection was the great difficulty of carrying out hypersensitivity tests, the toxic hazards of some pesticides to bird life, and the risk of taint following treatment of strawberries.

The question of taint was the subject of considerable comment and discussion during the conference, experiences differing considerably. This is a matter which is giving rise to considerable concern in Britain.

The outstanding problem of scab control on fruit, and the recent advances resulting from research were discussed fully. At present, the aim is to protect the trees from infection by scab spores, but the grower does not know exactly when infections occur and thus fungicidal cover has to be maintained from budburst until the end of July.

In America the conference was told, W. D. Mills has shown that it is possible to determine exactly when scab infections have occurred, and has now been established that scab can be eradicated by the use of organo-mercurial fungicides applied shortly after infection. This means that an efficient system of scab control employing a reduced number of precisely timed spraying applications becomes a possibility, and it is hoped that growers can be enabled to adopt this system.

Program Announced For Minnesota Soil, Fertilizer Short Course

ST. PAUL—The program has been announced for the Soil and Fertilizer Short Course to be held in Coffey Hall Auditorium, University of Minnesota Institute of Agriculture, Dec. 5.

H. J. Sloan, director of the Minnesota Agricultural Experiment Station, will extend the welcome at 9 a.m. Following him on the morning program will be:

John Grava, supervisor of the Minnesota Soil Testing Laboratory, "What Makes a Good Soil Test?" W. L. Nelson, American Potash Institute, Lafayette, Ind., "How Do the University Soil Testing Laboratory Serve Industry?"; Carl Asch, county agent, Crookston, Minn., "Problems in Fertilizer Recommendations," and L. B. Nelson, U.S. Department of Agriculture, Beltsville, Md., "Climatic Factors in Fertilizer Use."

W. P. Martin, head of the university's department of soils, will preside at the morning session, and W. B. Myers, head of the department of agronomy and plant genetics, will preside at the afternoon session. Speakers in the afternoon will include:

G. R. Blake, department of soil "Fertilizer and Soil Structure"; L. C. Boler, Faribault County grain farmer, "How I Grow Corn"; J. R. Kenne, Hebron, Neb., banker, "Financial Fertilizer," and J. M. MacGregor, department of soils, "New Information on Nitrogen Use."

\$3,000 LOSS

ZAP, N.D. — An estimated \$3,000 market loss caused by rodent contamination is reported on government stored grain here.

SAFETY PROBLEM

Pesticide Hazards During and Following Application Called Most Dangerous Period of All

Problems of safety in connection with the use of economic poisons are greater during and after application, than at any other time. On the other hand, safety practices are not a problem in manufacturing plants of the producers of basic agricultural chemicals, and in the processing plants of formulators of basic compounds into field use products.

It is the intention of the author to suggest a cooperative action, in which the several trade associations, the Federal and State regulatory agencies and possibly the Universities might join, which could result later in a widespread campaign to promote safe practices during, and after, applications of hazardous or injurious economic poisons.

Safety practices in plants are such that when personnel suffer injury, the incident almost certainly can be classified as a true accident caused by a failure of mechanical equipment. That is so because, from the start of volume production of highly toxic compounds, industry's industrial hygienists have refined and improved techniques designed to protect production personnel—and management has required strict adherence to precautionary rules.

It is the misfortune of manufacturers of potent pesticides that they can not control field uses of their products. Traditional marketing of pesticides throughout our agricultural economy requires basic producers to depend upon formulators, distributors and dealers to get their products into the hands of farmers and service applicators (ground and air) for end point uses.

Distributors and dealers cause their principals worries only in connection with the so-called "broken package" deal. Fires in two pesticide warehouses in the West have created a demand by some political entities for storage ordinances, but that problem is dissociated from the problems of use and post-use of pesticides, and the Western Agricultural Chemical Assn. proposes to cooperate with authorities and consult with the National Agricultural Chemicals Assn. and the Manufacturing Chemists Assn. on that one.

In the use and post-use category of pesticides, farmers and their employees, and ground and air service operators, have created and are creating, problems which industry thinks should not be dropped into its lap, but which nevertheless are. People who comprise the end use groups far too often ignore the instructions and recommendations for use and handling given on labels. For the record, I shall say that label information is accurate and explicit. It is the combined product of manufacturers of integrity, the agricultural experiment stations, and the Federal and State regulatory agencies. Labels are designed for one purpose: the safety of agricultural personnel and the general public.

The end use groups quite universally disregarded responsibility for safe, final disposal of "empty" metal containers; although they seem now to have accepted as standard practice the burning of paper containers—apparently because disposal of paper by fire is a simple, inexpensive procedure requiring little labor.

Metal containers of from one to fifty gallons capacity have become a frustrating problem of considerable magnitude to regulatory officials and

EDITOR'S NOTE

This article is from a talk by C. O. Barnard, executive secretary of the Western Agricultural Chemicals Assn., presented before the Association of American Pesticide Control Officials, Inc., in Washington, D.C., Oct. 15, 1955. Title of the paper was "Safety—Problem Child of the Pesticide Industry."

to industry in California and in other areas of the West. There are thousands of five-gallon "empties" on dumps in each of several locations and air strips everywhere are decorated with empties.

Unfortunately, almost none of these containers are even virtually empty; and, even if they were, they would be potentially dangerous. In the eyes of the law, they are, I believe, "attractive nuisances." If pesticide "empties" will hold water, or if they would be useful if cut and flattened for the building of shacks, death or sickness could be the fate of those who might handle them.

Agricultural inspectors at one air strip drained the residual pesticide from ten one-gallon cans—and collected a full gallon of a very potent compound! In addition to the very great hazard of the residual pesticide, a 10% economic loss was involved. It would seem that so large a residual content in each can is inexcusable; but perhaps it was due in part to the fact that the design of certain containers, in order to make them sturdy, tends to preclude rapid draining.

Such cans may be drained quickly only by punching a good-sized hole just under the upper periphery of a can. That requires a little time, and time is of the essence when an agricultural aircraft is in for loading. It also is a bother—and why bother?

Whatever the reasons for tailings in containers, adequate disposal of them is a baffling problem. So far as we in the West are concerned, industry and WACA have recommended that all metal containers be punctured in several places, or crushed with heavy equipment, then buried. Implementation of that recommendation could be a hazardous operation because a considerable volume of toxic materials would be squashed out of the containers. Such disposal procedure is not ideal, but we have been unable to devise a better one.

In an attempt to find a means of decontamination of empties to obviate the necessity for puncturing and crushing, I have sought to find a chemical, or chemicals, which would neutralize residual pesticides; but there seem to be no possibilities which would not create other hazards.

At any rate, puncturing, crushing and burying is not being widely practiced. Bulldozers are expensive to buy or to hire, labor is costly—and again there is the bother of it all. So containers with their lethal residues pile up; and public officials are asking themselves, and are asking industry, "What shall be done about the situation?"

Industry's reply is, in effect, that it has produced extremely useful products which agriculture had long needed and now demands. Those chemical compounds must be packaged, when in liquid form, in heavy plate containers, to assure safety in transportation, handling and storage.

The economics of container production, transportation and spoilage preclude the return of such containers if they are of less than fifty gallons capacity.

Industry's further position is that, as with other liquid commodities, several sizes of containers must be utilized in order to have suitable distribution of products to all classes of agriculturists; and that, by accepted and long-established common practice in our agricultural economy, an empty container is the responsibility of the final purchaser.

It seems to me that industry's position is logical and tenable. Unfortunately, the problem remains.

In one western state there occurred recently considerable frenzy over eight hospital cases in one week from pesticide poisoning. All of the victims were agricultural aircraft service personnel—pilots and loaders. The causal evidence obtained by all interested parties, official and non-official, showed clearly that each case was the result of careless handling, plus culpable indifference to the known hazards so far as personal hygiene was concerned. This is the old "familiarity breeds contempt" problem.

We also have the "broken package" problem. Dealers and others who well know that certain products should be dispensed only in original packages will sell pounds or pints or gallons of a corrosive or otherwise injurious material out of a large container, put it in any bag, bottle or can available—and ignore without a qualm the absence of the manufacturer's label. Those men have no sense of public responsibility and are stupidly indifferent to their own best interests.

There is no need further to state the case. The great need is a solution to those several related problems; and there seems to be no approach to a solution other than that which is loosely termed "education."

How can there be induced into the minds of buyers and applicators of hazardous pesticides an action-implying willingness to follow literally the directions and cautions given on pesticides labels? Can enough people in end use occupations be sold that principle of operation to reduce greatly the incidence of use and post-use poisonings? Human nature being what it is, can consumers be induced to cooperate effectively for the safety of all without subjecting them to penalties for non-cooperation?

Individual manufacturers and others have tried to find satisfactory answers to those questions but none, so far as I know, can say that outstanding success has followed effort. WACA printed and distributed this year many thousands of multi-language safety posters. We believe they were helpful, but there is no way of measuring so small an effort. Sustained impact, through constantly changing devices, may be required.

In view of the record, it obviously is futile to expect, or to assume, that the several problems will solve themselves. We do know, however, that persuasive pressure has many times changed mass attitudes. So I have been asking myself these questions:

Is it reasonable to believe that concerted, persuasive action by the trade organizations, the regulatory agencies and the universities—those interested in continued economic uses of modern pesticides—would be able to achieve the desired objective? Could such a cooperating group conceive, develop, organize and conduct such a project?

Probably no individual in the country possesses sufficient factual information, plus the vision, to compose at this time intelligent answers to those questions. Certainly I can not do so. All I can say is that need for control of the situation is urgent.

I do not propose that an attempt be made now to formulate a campaign of the magnitude required. I

do propose that the trade associations and the Federal and State regulatory agencies give earnest consideration to organizing a committee representative of those organizations plus, if possible, qualified personnel from several colleges and universities, to explore the whole situation.

The objective of that committee would be to determine whether an effective safety campaign is feasible. I am a strong believer in the power of intelligent cooperative effort; and am confident that a mass pooling of ideas and work can solve the problem. The universities and the regulatory agencies could participate, of course, only in an advisory capacity. How industry might finance such a project need not concern us now; but I believe that the major producers of pesticides would support in every way a well-organized, timely campaign.

A successful effort could come into being only through the application of vision and far-horizons thinking. Research almost certainly will uncover from time to time additional chemical compounds which will be highly potent to warm-blooded animals but so beneficial to agriculture that they must be used. Action is required. Action calls for leadership. It seems to me that industry should be the leader!

Alfred Hirsch Named Research Scientist For Diamond Alkali

PAINESVILLE, OHIO — Creation of the position of research scientist within the research organization of Diamond Alkali Co. and promotion of Dr. Alfred Hirsch to the new post were announced here at the Diamond Research Center recently by John A. Sargent, president of Diamond.

"The position of research scientist is being established by Diamond," Mr. Sargent said, "as the first step of a long-term program designed to recognize, within our organization, scientific achievement entirely apart from administrative functions."

Senior group leader at the Diamond Research Center since August, 1954, Dr. Hirsch is a 27-year career man with the company, having joined it as a chemist in 1928. He was named a group leader in 1943.

Dr. Hirsch, who has numerous American and foreign patents to his credit, received his early education in Mannheim, Germany. He holds B.S., M.A., M.S., and Ph.D. degrees based on his university training at Heidelberg, Munich and Berlin.

Presently chairman of the Northeastern Ohio section of the American Chemical Society and a past president of the Diamond Technical Society, Dr. Hirsch also holds membership in the American Association for the Advancement of Science.

American Potash to Buy Western Electrochemical

LOS ANGELES—American Potash & Chemical Corp., which owns 48.2% of the common stock of Western Electrochemical Co., has offered to acquire the balance of its outstanding stock through the exchange of 33,295 shares of American Potash class B stock, Peter Colefax, president, has announced.

Western Electrochemical Co. carries on its operations, which are primarily in the electro-chemical field, at Henderson, Nevada, where it manufactures ammonium and potassium perchlorate, sodium and potassium chlorate, manganese dioxide and manganese metal.

HEADS KANSAS AGENTS

MANHATTAN, KANSAS — Clarence Hollingsworth, Greenwood County agent, has been elected president of the Kansas County Agents Assn.



MISS CROP DUSTER—Bettye Jane Belk, 18, Fort Worth, Miss Crop Duster of 1955, looks just a bit skeptical in the above scene at the annual meeting of the Texas Aerial Applicators Assn., held Nov. 11-13 in Corpus Christi. At the left is Joe Jones, Rio Hondo, immediate past president of the association, and right is Ralph Crosnoe, Texarkana, new president. Bill Lewis, Houston, was elected vice president at the meeting, which set a record with an attendance of 238.

National Planning Assn. Committee Asks For Many-Sided Attack on Farm Problems

WASHINGTON—The Agriculture Committee of the National Planning Assn. Nov. 14 warned against seeking "one grand solution" to the problems plaguing U.S. agriculture. Instead, in a 30-page report, "A New Look at Farm Policy," the nonpartisan, nonpolitical committee called for a many-sided attack through a series of related programs. New approaches are suggested to help shift production from surplus crops and help stabilize prices by increasing consumption of farm products.

The committee proposed that some of these new methods be tried at first on a limited, or pilot, scale, observing that it is a common practice in American industry to test out new programs in a pilot plant or in a limited area before widespread application. "Such an approach is overdue in tackling our national farm problems. It is not costly when compared to no action at all or the launching of widespread programs without first 'getting the bugs out,'" the group asserted.

Among the 30 members of the committee who signed the report are farmers, officers of farm organizations, agricultural editors and university professors from different parts of the country.

The committee emphasized that new farm technology has had a greater effect on farm productivity than changes in price support levels. "In fact," it stated, "much energy is wasted in arguing in terms of such symbols as flexible vs. rigid supports." Farmers will continue to face price ups and downs caused by high production or weather uncertainties, the committee believes, "even with high employment and general prosperity, and reduction of the most serious immediate surplus problems."

Calling for continued testing of measures to reduce price instability, the committee recommended an experiment in production payments, rather than purchase and storage, to support dairy products at 75% of parity. Such an experiment would throw light on the relative value of the two methods of support in case support for other livestock products seemed desirable in the future.

The committee also recommended high priority treatment on the use of public funds for conservation practices in the next few years, with emphasis on reducing output of wheat, cotton and some feed grains, and holding livestock expansion in check. Reclaiming or bringing new

lands into irrigation should receive much lower priority, the group said. In order to shift acreage from surplus crops to a standby basis, the committee proposed:

1. A system of land rental which the U.S. Department of Agriculture should "press forward vigorously." Contracts with farmers would provide for transfer of some fields producing surplus crops to soil-holding crops for a specified time.

2. Government purchase or leasing of marginal wheat lands in high-risk areas to retire them from production.

3. Provision of USDA funds for additional research in grass and legume seed production to meet needs of proposed conservation methods; in years of excess production of such seeds, price supports; and possibly direct payments if necessary for expanded production.

"One of the keys to the long-run solution of the basic problem in agriculture," the group stated, "is the increased domestic consumption of animal products." Such an increase would improve general nutrition, meet consumers' wants and help shift acreages from production of surplus crops.

The committee also called for increased efforts to boost exports of food and fiber.

Failure to hammer out a firm, stable and widely understood policy on agricultural reserves, the committee said, "is a serious deficiency in national policy and sets a major cloud of uncertainty for farmers." It suggested that the President "appoint a commission to develop for the approval of Congress a strategic reserve policy and program for food and fiber." Such a program should not be used as a price support measure, the committee warned, but is necessary as a precaution against the dangers of war or drought.

"The pressure on farm prices and farm incomes will be intolerable," the committee said, "unless the income is divided among fewer farm people and unless more farms can be organized into economic units."

Farmers in chronically low-income, low-producing areas, according to the report, have special problems which are receiving far too little attention. Noting that some direct aid in helping families move to new locations may be needed, the committee suggested pilot programs to work intensively in areas where the problem is most acute.

DR. COLEMAN

(Continued from page 1)

refinement and revision, Dr. Coleman noted in the case of corn that we are currently producing approximately three billion bushels on about 80 million acres. He forecast that if recommended plant food and soil conservation practices were followed, that the nation could produce at better profits per acre and per unit, an estimated current annual requirement of corn of about 2½ billion bushels from only 36 million acres.

His material as presented by state college experts, indicated that the lower level of production from a substantial reduction of acreage could be accomplished at a cost of approximately 80¢ per bushel as compared with the currently estimated cost of about \$1 bu. Dr. Coleman, in making these statements, was using national average figures as his base. In the case of corn, he used a current national yield per acre estimate of 37 bu. per acre from 80 million acres as against a prospective yield of 70 bu. per acre from 36½ million acres.

He qualified these figures by saying that some refinement of them would be necessary, but he charged that they were adequate to prove that the direction he saw for future farm operations and profit potentials from good soil conservation practices, was correct.

In wheat, Dr. Coleman saw the same opportunities for better profit from fewer acres. With costs per unit lowered and yields sharply increased on a national average basis from a current top level of 18 bu. per acre to 24 bu. potential, this can be accomplished.

In dramatizing the wheat surplus problem and predicting that good soil management and adequate plant food practices would provide a big step toward the surplus solution, Dr. Coleman estimated that as the surplus disposal problem was being solved, the wheat growers of the nation probably could produce 775 million bushels of wheat from 32 million acres, with the prospect of nearly double per unit profits from that crop.

Likewise in cotton there is the same elbow room for greater profits per units of production and per acre as the surplus now existing is moved into consumption channels.

While Dr. Coleman spoke with the vigorous optimism, he was careful to qualify his comments to wider horizons than are seen in the near future.

Touching on the subject of removal of land from field crop production, Dr. Coleman indicated that the removal of as much as 75 million acres of land currently in field crop production could be accomplished while at the same time farm net income could be improved substantially. In brief what he was saying is that the farmer can get a better net profit on fewer acres and still maintain production levels necessary to our domestic economy and export requirements.

For the most part, his specialized audience appeared in agreement with him but they raised the issue of the mechanics of the transition. They pointed out the difficulties of removal of land from field crop production in such crops as corn. They noted, and Dr. Coleman agreed, that the scope of his plan would undoubtedly mean the retirement of some of the most productive land of the Great Plains states from production. They asked how he would effect, for example, a 50% reduction in commercial corn acreage at the farm level since some farms were geared through investment and equipment to operate a unit of double the size the Coleman idea would contemplate.

Dr. Coleman admitted that his ideas had not been tailored down

to the farm unit application. He said his thoughts were aimed at a broader solution—one which refused to contemplate the present surplus problem as one of chronic disaster. He foresaw rosier prospects ahead.

The social aspects of the farm evolution he contemplated were raised from the audience who questioned the pace of such a change and what might happen to farmers who were unable or unwilling to adapt themselves to the drastic changes involved. Again, Dr. Coleman said he was not prepared to submit a blue print of detailed operations.

He repeated that his ideas were those developed as a result of consultations with leading state college soil conservationists and land use economists. He said he believed that material they had prepared and tested in their economic laboratories was of sufficient importance to be brought in to the open for all and sundry to use as a potential guide in shaping future farm policies.

Following the formal session one of the USDA economists said he could see in the current farm problem a condition closely parallel to the industrial revolution in England where the steam-powered factory literally wiped out domestic industries of spinning and weaving. Those sweeping changes came rapidly and probably faster than evolution or revolution will happen in the farm communities. This official also noted that there already had been an increasing pace of immigration from the farm to urban fields of endeavor.

Again, it must be reported that Dr. Coleman did not set forth his idea as a blue print for Utopia in farm life. Quite to the contrary, he emphasized that his statements were rather to serve as a guide for those who sought an escape from the surplus-commodity captivity which currently seems to have enslaved many minds studying the farm problem today.

Building for Khapra Beetle Study to Be Erected in California

BERKELEY, CAL. — How to control the Khapra beetle will be studied in a new building to be constructed on the Riverside Campus of the University of California. The first research building in the nation to be devoted to studies on this serious pest to stored grain will be built on the campus to provide isolated facilities for entomologists to raise insects and conduct chemical and other control tests. The facilities will permit raising the beetle without endangering or contaminating other university buildings.

Facilities will include rearing rooms for raising mass cultures, laboratories for checking the effectiveness of various control techniques, fumigation chambers, and equipment for formulating the hundreds of insecticides which will be applied under precision conditions in the laboratories.

There will also be space for evaluation of the effects of various chemicals on the germination of many seed varieties. Experiments will be conducted by Dr. David L. Lindgren and Dr. Glenn E. Carman, entomologists at the University.

MORE LETTUCE

ALAMOSA, COLO. — Sky Valley Farms has announced that it plans to build a second lettuce processing tub which will make it possible for San Luis Valley growers to double the lettuce crop in 1956.

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Program Set for
Land Use Forum
At Kansas State

MANHATTAN, KANSAS — Land use problems, from blowing dust to city slums, will be tackled by a slate of experts at the Land Use Forum scheduled Nov. 29-30 on the Kansas State College campus in Manhattan. Kansas State College scientists along with public leaders from out of the state will be on hand for the meetings. Following a kick-off speech at 9:30 a.m. Nov. 29, in Nichols gymnasium by James A. McCain, president of Kansas State, C. E. Kellogg, administrator in charge of soil surveys with the U.S. Soil Conservation Service, will take up land use from the standpoint of climate and soil.

F. W. Smith, Kansas State soil scientist, will talk on erosion, fertility and land management problems. The remainder of the morning will be spent in discussion groups.

An afternoon panel including Dwight Nesmith, Kansas State engineering experiment station researcher, Ethan Allen, University of Kansas, and Wolfgang G. Roeseler, Kansas City planning commission, will take up industrial land use, public use and residential use.

Firman E. Bear, editor of Soil Science and emeritus soil scientist at Rutgers University will talk on population and food supplies as related to land use.

Agricultural land use problems and non-agricultural land use problems will be taken up Nov. 30 by George Montgomery, Kansas State agricultural economist, and Frank Graham, of the Kansas State department of architecture and allied arts.

Raymond J. Penn, University of Wisconsin economist, and C. C. Colby, visiting professor of geography at the University of Kansas, will give some possible solutions to both agricultural and non-agricultural land use problems on the afternoon program.

Glenn A. Moore Dies

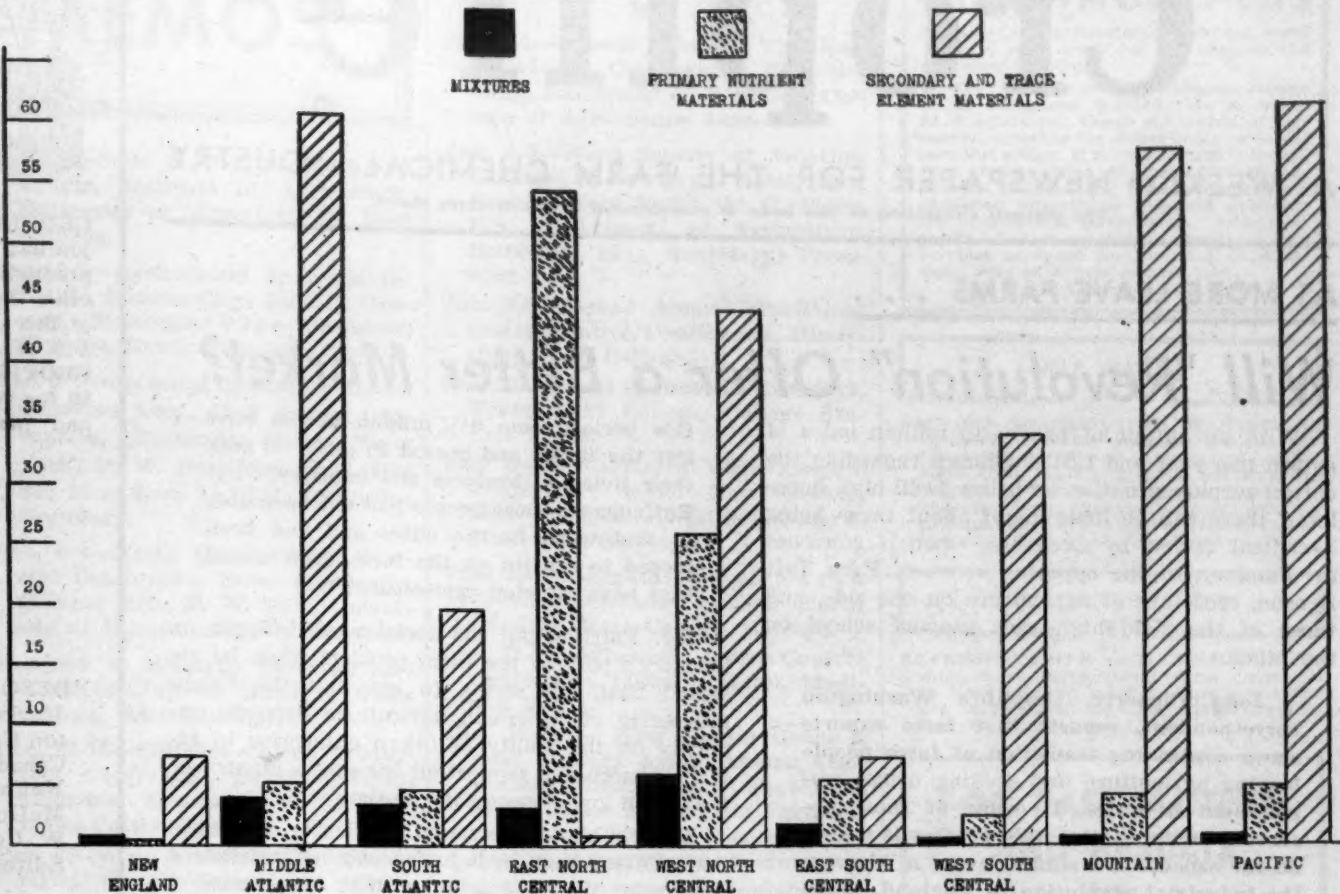
PORTLAND, ORE. — Glenn A. Moore, Northwest manager of Atkins, Kroll & Co., of San Francisco, died suddenly in Bend, Ore., Nov. 6. Mr. Moore was stricken with a cerebral hemorrhage Nov. 3 while in attendance at the annual convention of the Pacific Northwest Plant Food Association.



Thomas J. Hoshall

NEW GENERAL MANAGER—Farm Fertilizers, Inc., Omaha, has announced the appointment of Thomas J. Hoshall to the position of general manager of the company, effective Nov. 1. Mr. Hoshall has been associated with the company since July, 1950, and has held the office of vice president for the past two years. He will continue to hold his title of vice president along with his new position.

Per Cent of All Solid Fertilizers, in Class, Shipped in Bulk, 1953-54



Bulk Fertilizer
Shipments Total
8%, USDA Reports

WASHINGTON, D.C. — Bulk fertilizers comprised 8.39% of the total of fertilizer materials distributed in the continental U.S. during the fiscal year 1953-54, according to figures released by the U.S. Department of Agriculture.

The figures, compiled by Walter Scholl, Hilda M. Wallace and Esther I. Fox, Fertilizer and Agricultural Lime Section, Soil and Water Conservation Research Branch, Agricultural Research Service of USDA, Beltsville, Md., were reported by Mr. Scholl at the recent meeting of the Association of American Fertilizer Control Officials. (See page 1 of the Oct. 24 issue of Croplife.)

The accompanying chart and graph present a summary of the picture, regarding both actual tons distributed and also the percentage of bulk materials shipped in various regions, by class.

Percentage columns shown in the graph above, may be further studied by relating these percentages to the tonnages listed in the accompanying chart by regions. USDA points out that distribution of these materials in bulk refers only to that intended for retail consumer trade. It does not include materials shipped for manufacture.

Primary nutrients listed include commercial distribution of natural organics, ground phosphate rock, colloidal phosphate, basic slag, and cement flue dust.

Secondary and trace elements include borax, sulfur, metallic salts, etc., used as separate materials. They do not include liming materials, but do include gypsum.

FALL APPLICATION ADVISED

EAST LANSING—Michigan fruit growers are being advised that now is a good time to apply fertilizer to fruit trees. Fruit trees have root systems that often go deep into the soil and the fall application gives the fertilizer a chance to reach the roots by spring so that the tree can make quick use of it when the warm weather arrives. That contention is made by Paul Larsen, extension horticulture specialist at Michigan State University.

Distribution of Solid Fertilizers in Bulk, by Regions,
for Year Ended June 30, 1954

| Region | Total number | Manufacturers reporting | | Tonnage of solid fertilizers shipped in bulk | | | Total |
|--------------------|--------------|-------------------------|----------------------|--|----------------------------|---------------------------------------|-----------|
| | | Number reporting | solid bulk shipments | Mixtures | Primary nutrient materials | Secondary and trace element materials | |
| New England | 126 | 7 | 6 | 1,923 | 268 | 40 | 2,231 |
| Middle Atlantic | 301 | 65 | 50 | 71,240 | 11,855 | 2,569 | 85,664 |
| South Atlantic | 308 | 103 | 65 | 168,148 | 46,537 | 13,539 | 288,224 |
| East North Central | 291 | 64 | 74 | 111,201 | 631,054 | 22 | 742,277 |
| West North Central | 281 | 40 | 68 | 77,124 | 200,064 | 562 | 277,750 |
| East South Central | 204 | 37 | 35 | 33,806 | 49,817 | 111 | 83,734 |
| West South Central | 142 | 7 | 18 | 3,608 | 14,705 | 1,123 | 19,436 |
| Mountain | 126 | 2 | 14 | 303 | 11,214 | 20,510 | 32,027 |
| Pacific | 103 | 1 | 10 | 2,070 | 45,750 | 310,565 | 358,385 |
| Continental U.S. | 1,882 | 326 | 342 | 469,423 | 1,011,264 | 349,041 | 1,829,728 |



INSPECT ANTIBIOTIC PRODUCTS—Group of plant experts examine the effects of an antibiotic used to combat plant diseases while visiting the Squibb Institute for Medical Research, New Brunswick, N.J., recently. Above, a group inspects pepper, bean, corn and tomato plants which have been treated with "Phytomycin," an Olin Mathieson Chemical Corporation antibiotic product used to combat plant diseases. From left to right are: Robert Zerkel, Olin Mathieson insecticides division; Dr. Andre C. Francis, Centre National de Recherches, Zootechniques, France; Dr. J. Tiewa, University of Munich, Germany; Prof. Johannes Brueggemann, Institute of Physiology and Animal Nutrition, University of Munich, Germany; Dr. H. Zucker, University of Munich, Germany; Dr. Fred E. Deatherage, department of agricultural biochemistry, Ohio State University, Columbus, Ohio, and Dr. J. Schole, University of Munich, Germany. These were part of the group of experts from the U.S. and thirteen other countries who were attending the first International Conference on the Use of Antibiotics in Agriculture in Washington, D.C., under the auspices of the National Research Council. At the Squibb Institute, they saw exhibits of plants with diseases such as fire blight, cherry leaf spot, halo blight, bacterial leaf spot and diseases that affect tobacco, peaches and potatoes. A number of plants on exhibit had been treated with "Phytomycin."

Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY
The regional circulation of this issue is concentrated in the Western states.

AS MORE LEAVE FARMS . . .

Will "Revolution" Offer a Better Market?

With an output of nearly 15 million bales of cotton this year and USDA officials regarding the cotton surplus situation as being "well-nigh hopeless," there can be little doubt about there being a critical review by Congress, when it convenes in January, of the opposing views of Ezra Taft Benson, secretary of agriculture on one side, and those of the rigid high-price support school on the other.

John Cipperly, Croplife's Washington correspondent, reports that farm experts see a continuing transition of farm people leaving agriculture and seeking urban employment in cities. To some of these observers in the capital, this process is taking on the aspects of a similar event in history: the industrial revolution in England. Some USDA economists have expressed fears that the excesses of that revolution may be repeated here as the farm transition moves ahead.

Mr. Cipperly comments on this phase of the situation as follows: "It must be noted that neither within the top-level staff of USDA nor within industry, is there any desire to ride roughshod over that section of farm life which may be forced, through legislative persuasion or economic attrition, to seek other fields of work.

"On the contrary, True D. Morse, under-secretary of agriculture has put forward a reconstruction program for small farm units which would in many cases enable them to improve their economic lot in the farm communities."

There are large and significant differences between attitudes of today and those prevalent at the time of the British industrial revolution, it is pointed out. In the first place, there is a greater over-all understanding of the problem and industry has a deep awareness of its social responsibility in the matter.

"The fertilizer and pesticidal chemical industries indeed would not tolerate the law of the jungle coming into play and having such a condition prevent the smooth transition of the farm community into a more profitable, healthier and comfortable environment," Mr. Cipperly concludes.

If there is doubt about what constitutes industry's feeling toward the "revolution," here are some excerpts from a talk by Benjamin F. Fairless, of U.S. Steel Corp., made at Kansas State College recently when he appeared at the opening of its new feed technology building.

Commenting on the farm problem and its relation to industry and business, he said, "We are watching the government's farm program as anxiously as you are . . . we know that when wages are high and jobs plentiful, our people not only buy more food but also the more expensive varieties . . . we know that agriculture provides more than half of all the raw materials that are used by manufacturing industry . . . a healthy market for farm crops is the most effective price-support program that has yet been devised.

"The American farmer is the most productive in the world. His technological progress has been so phenomenal that with modern feeds, seeds, chemicals and farm machinery he now produces more than twice as much, per man hour, as he did 17 years ago.

"Since demand for food products is limited by the narrow confines of the human stomach and population growth, this means it takes fewer farmers to supply all the produce that the market can absorb. So during

this period some 9½ million people have left the farms and moved to cities to seek their living in business and industry. . . . But suppose those people had not been able to find work in the cities and had been forced to remain on the farm. How would that have affected agriculture?"

Mr. Fairless put his social-minded finger on industry's part in the farm problem when he asserted that, "It seems to me that the future prosperity of American agriculture depends primarily on the ability of urban enterprise to attract, absorb and support all the excess manpower that is no longer necessary on the farm."

Therein should be found no clearer assurance that the top men in industry will not tolerate a repetition of the conditions that were created through the industrial revolution in England.

By the same token, it means that a large proportion of those who remain on the farms will constitute a better market for fertilizer and pesticides. One important reason for this assumption is that an increasing number of American farmers have been schooled in the value of employing these chemical tools to their utmost extent.

While the immediate effects of the transition may be uncomfortable, we should not lose sight of the fact that population curves are pointing upward, while at the same time farmers are moving into urban industry. The realistic way to look at a situation of this character, we think, is to regard it as an opportunity to do a better selling job on the remaining farm buyers who are assuming broader responsibilities. Greater sales effort will help to make the "revolution" painless.

Today's Kids; Tomorrow's Market

Attention paid to young people who will comprise the agricultural market of tomorrow is regarded by many as being well worth the investment of time and money to guide the youngsters into more knowledge of efficient farming.

At the recent meeting of the Future Farmers of America in Kansas City, this fact was emphasized by the many hundreds who attended and applauded the young men who have shown particular aptitude for their chosen profession.

Hugo Reimer, president of the Nitrogen Division of Allied Chemical & Dye Corp., New York, representative of many American business men who have backed this program, described his visit to the meeting as a "very inspiring experience."

He said that a look at the work records of the "Star Farmer" and other members of the youth organization, has convinced him that modern farming methods are becoming even more common. The boy chosen as Star Farmer "has done an excellent job of reducing his land planted in crops and diverting more of the surplus for pasture," he observed.

Another good fact for the future farmers to remember was expressed by Mr. Reimer. "The use of fertilizer has increased his income in spite of the decline of farm prices. If all farmers did this, there would be a much less severe farming problem. By improving their practices, farmers can decrease the unit cost of production to maintain or increase their incomes. There has been a decline in farm prices, however, this need not be reflected in a declining farm income," he observed.



CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at \$5 for one year, \$9 for two years (\$8 a year outside the U.S. and possessions). Single copy price, 25¢.

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MEETING MEMOS

Nov. 21-22—Eastern States Branch, Entomological Society of America, Lord Baltimore Hotel, Baltimore, Md.
 Nov. 22—Manufacturing Chemists' Assn., Semi-Annual Meeting and Winter Conference, Statler Hotel, New York.
 Nov. 28-Dec. 1—Entomological Society of America, Netherlands Plaza Hotel, Cincinnati, Ohio.
 Nov. 28-Dec. 2—Nebraska Fertilizer Dealer Schools; at Auburn Nov. 28; Wayne Nov. 29; Valentine Nov. 30; Scottsbluff Dec. 2.
 Nov. 29—Fertilizer Short Course, North Dakota Agricultural College, Fargo.
 Nov. 29-30—Western Canadian Weed Control Conference, Regina, Sask.
 Nov. 29-30—Land Use Forum, Kansas State College, Manhattan, Kansas, Dr. R. V. Olson, Kansas State College, Chairman, Arrangements Committee.
 Nov. 29-30—Oklahoma Plant Food Educational Society, Inc., Memorial Union Bldg. Oklahoma A&M College, Stillwater.
 Dec. 2—South Dakota Fertilizer Dealers Short Course, South Dakota State College, College Station.

Dec. 5—Soils & Fertilizer Short Course, Institute of Agriculture, University of Minnesota, St. Paul Campus.
 Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.
 Dec. 5-7—Chemical Specialties Manufacturers Assn., 42nd Annual Convention, Roosevelt Hotel, New York; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., Executive Secretary.
 Dec. 6-8—North Central Weed Control Conference, Hotel Fontenelle, Omaha, Neb., F. W. Slife, University of Illinois, secretary-treasurer.
 Dec. 8-9—Michigan Fertilizer and Lime Conference, Michigan State College, East Lansing.
 Dec. 15-16—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Sponsored by the National Cotton Council.
 Dec. 28-30—American Phytopathological Society, Atlanta, Ga.; Glenn S. Pound, University of Wisconsin, Madison, Wis., Secretary.
 Dec. 29—Symposium on Health Hazards of Chemicals, before the Pharmacy Section at Annual Meeting of American Association for the Advancement of Science, Atlanta.

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1956

Jan. 3-4—Annual Nebraska Fertilizer Dealers Conference, Activities Bldg., University of Nebraska College of Agriculture, Lincoln.

Jan. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York; W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

Jan. 5-6—Second Annual Mississippi Insect Control Conference, Mississippi State College.

Jan. 5-6—Texas Fertilizer Conference, Texas A&M College, College Station, Texas.

Jan. 6—Northeastern Weed Control Conference, Hotel New Yorker, New York, R. J. Aldrich, Rutgers University, Secretary.

Jan. 10-11—Eighth Annual North Carolina Pesticide School, North Carolina State College, Raleigh.

Jan. 11-12—Wisconsin Insect Control Conference, Lorraine Hotel, Madison, Wis.

Jan. 15-17—New Mexico Grain & Feed Dealers Assn., Annual Convention, Hilton Hotel, Albuquerque, with Special Portion for Fertilizer and Farm Chemical Dealers; H. B. Henning, Albuquerque, Secretary.

Jan. 16-18—Northwest Vegetable Insect Control Conference, Imperial Hotel, Portland, Ore.

Jan. 16-18—Southern Weed Conference, Ninth Annual Meeting, Hotel Jung, New Orleans; Dr. E. G. Rodgers, Florida Agricultural Experiment Station, Gainesville, Secretary-Treasurer.

Jan. 26-27—Custom Spray Operators Training School, University of Illinois.

Jan. 26-29—Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Jan. 27—Colorado Agricultural Chemicals Assn., Cosmopolitan Hotel, Denver.

Jan. 30-Feb. 3—Illinois Pest Control Operators School, Purdue University, Lafayette, Ind.

Feb. 6-8—Agronomy Section, Association of Southern Agricultural Workers, Atlanta (Ga.), Biltmore Hotel; W. E. Colwell, North Carolina State College, Secretary.

Feb. 6-8—Cotton States Branch, Entomological Society of America, Biltmore Hotel, Atlanta, Ga. W. G. Eden, Alabama Polytechnic Institute, Auburn, Ala., secretary-treasurer.

Feb. 7-9—National Garden Supply Trade Show, Kingsbridge Armory, New York City.

Feb. 14-16—Agricultural Chemicals Conference, Lubbock, Texas.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Feb. 15-17—Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., Secretary-Treasurer.

March 6-7—Fifth Annual Western Cotton Production Conference, Fresno Hacienda, Fresno, Cal.

March 14-18—National Agricultural Chemicals Assn., Spring Meeting, Hollywood Beach Hotel, Hollywood, Fla., Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

March 28-30—North Central States Branch, Entomological Society of America, Purdue University Memorial Union, Lafayette, Ind.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Ro-

CROPLIFE, November 21, 1955—23

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$9 per column inch. All Want Ads cash with order.

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anoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 28-30—Seventh Regional Fertilizer Conference of the Pacific Northwest, Chinook Hotel, Yakima, Wash.

Charles A. Fetscher Named Laboratory Director for Nopco

HARRISON, N.J. — The Nopco Chemical Co. has announced the appointment of Dr. Charles A. Fetscher as director of its industrial general laboratory.

In his new position, Dr. Fetscher will be in charge of all research activities pertaining to the development of new products for Nopco's Industrial Division. These products include synthetic organic chemicals and industrial processing specialties for such diverse industries as the manufacture of paper, leather, textiles, paint, lubricants, cement, detergents, fertilizers, adhesives and insecticides.

A graduate of Holy Cross College, Dr. Fetscher received his Ph.D. in organic chemistry from Columbia University. Before coming to Nopco, he was head of research for Cluett, Peabody & Co., Inc.

Plans Set for Illinois Spray Operators School

URBANA, ILL.—The eighth annual Custom Spray Operators' Training School is scheduled for Jan. 26-27 at the University of Illinois. Sessions will start at 10 a.m. Jan. 26. They will include discussions of new control measures, new insecticides, new regulations and the outlook on the insect situation for 1956. There will be a smoker from 7:30 to 9:30 p.m. Jan. 25 at the Illini Union Bldg.

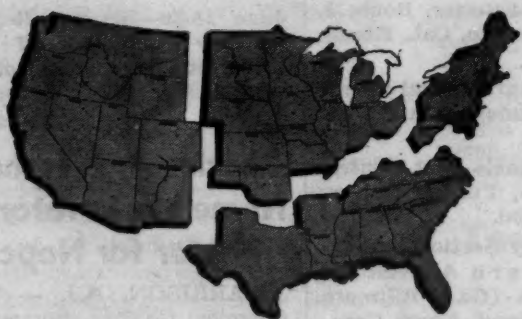
Simultaneous meetings of the Agricultural Spraying Assn. and the Illinois Aerial Applicator Assn. will precede the regular sessions. Those meetings will be held at 1:30 p.m. Jan. 25 in the Illini Union.

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